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ORIGINAL ARTICLES

THE RESPONSIBILITY OF THE STATE IN THE CARE OF ITS DEPENDENTS.*

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By education and experience I am not competent to discuss the proper treatment of the insane and the mentally deficient or the proper care of those dependents who come under the general charities of the state. As a member of the State Board of Charities of the state during the last three years, my experience in that position has given me a general idea of the insane and mentally deficient, which will enable me to speak with some authority upon the modern treatment of these people.

My experience has taught me that a proper and just treatment of those mentally ill and mentally deficient should be based upon the broad lines which govern us in the care of the physically sick in their homes and in the general hospitals. In other words, the modern treatment of the insane and mentally deficient is based upon the fact that they are human beings and are as deserving of proper hospital care and nursing as the individuals who suffer from pneumonia, typhoid fever or any other of the physical diseases.

In the past, the state has recognized its insane and most of its mentally deficient like the feeble-minded, the epileptic, etc., as individuals without hope of improvement, and hence they have received custodial care. Little or no attempt was made until the last two or three years to cure the acute insane, to improve a certain number of chronic insane or to properly care for those who are unimprovable.

The modern treatment of the insane recognizes three classes: First, the acute insane. Second, the chronic insane who may be improved

* Read at the Fifty-ninth Annual Session of the Illinois State Medical Society, Quincy, Ill., May 18, 1909.

mentally and physically by proper management; and third, the chronic insane who are unimprovable and who become more and more demented until they die.

Of the *acute insane*, from 50 to 75 per cent. are curable, if a proper treatment is begun early enough. Therefore, it is incumbent upon the medical profession which comes first in contact with the mentally sick individual to promptly place the patient in an institution under proper environment. When possible a psychopathic hospital should be chosen where intelligent medical supervision and nursing may be instituted just as if the patient suffered from typhoid or from other acute fever. The continuous bath, or some form of hydrotherapy, has proved to be the best quieting agent for excited, acutely insane patients, while proper rest with attention to the excretions of the body and freedom from the annoyances which may have been factors in the production of the disease, will be helpful in restoring all classes of the acutely sick.

In Germany, such psychopathic hospitals exist in connection with practically every university. The acutely insane patients receive the same amount of attention, care and attempt to cure them as are expended in the care of those ill of pneumonia and other acute infectious disease. There, too, clinics in psychiatry are held which students are obliged to attend as they do other general clinics. Patients recover under such management. At the same time, it serves as a means to educate the medical students in the care and treatment of the insane, and, furthermore, to recognize insanity when they go out in practice. Every state hospital should have a psychopathic hospital with all of the apparatus, including that of hydrotherapy, with an efficient medical staff and school for nurses and opportunities for clinics in psychiatry.

In a city as large as Chicago, such hospitals should be maintained for the proper treatment of the many cases of insanity which occur in such a large population. Such a hospital would serve as a distributing point of those patients, who do not recover, to the other hospitals of the state.

The Illinois law of commitment of the insane now provides for commitment upon the voluntary application of the patient. In addition to that the law should be amended to permit of the confinement of a patient in such a psychopathic hospital, without formal commitment by the law, for a period of not less than thirty days. If after such a period the patient were not recovered, the usual lawful commitment could then be made. Such a measure would remove one of the chief reasons for the non-commitment of the insane patients in the onset of the disease, inasmuch as the notoriety of commitment would be saved in all patients who were capable of recovery within thirty days. Patients and friends soon would learn that there was no more disgrace in going to a psychopathic hospital than to a general hospital.

Of the *chronic insane*, many are improvable. The chief means of improving this class of patients is by manual employment. Such patients may be incapable of continuing intellectual effort, but the greater number of the improvable class are capable of very good work with their

hands. Farming has proved to be the best form of manual treatment, and it has been stated by those in authority that every institution for the insane should have one acre of farm land for each subject. Upon the farm, those able to do so may be employed for a proper number of hours in all sorts of agricultural work, including the planting and reaping of crops, the care of the stock, the erection of and repair of buildings, fences, etc. Such work under proper supervision affords diversion, helpful exercise, good air and, in addition, the patient becomes partially self-supporting; by his work he secures good food from the garden, the farm and dairy.

In addition to this, such patients may be employed in manual work in the various shops about such an institution where the making and repair of shoes, clothing, the building of roads, repair of roads, etc., are necessary parts of institutional activity. The one prohibition I would see to the work of such patients would be that no dangerous machinery should be used such as is employed in factories in the making of clothing, boots, etc., for fear of personal injury. Besides, the purpose of the employment of such people is to improve them by manual training and employment, rather than to consider the value of the products which they turn out. Such improvable chronic insane patients need proper housing, proper bathing facilities, good wholesome food of a mixed character and the kindly care of attendants who may helpfully guide them in their work.

Proper means of amusement must be maintained for the diversion of the insane in the form of grounds for games of ball, croquet, etc., and halls for dancing, theatricals, music, etc. The nurses and attendants of all of the state institutions should have cottage homes separated from the patients, and they also should have rooms or a building set apart as places of amusement and recreation. Not until the state recognizes that it must afford opportunity for the enjoyment of the ordinary pleasures of mankind for its employees, will it secure proper nurses and attendants who will have every inducement to be kind, considerate and careful in their treatment of the sick, and at the same time will be induced to remain in the service of the state.

For the unimprovable chronic insane who daily grow more and more demented, custodial care alone can be carried out. This must be done in properly constructed buildings, which will afford them safety from risk of life or limb by fire or other accident and which will also maintain them in proper bodily comfort with good beds, selected simple food and good, kindly matronly attendants' care.

The state's responsibility for its dependent insane is, therefore, that it should maintain psychopathic hospitals, clinics in psychiatry, farms large enough with appropriate shops for the manual training of the improvable insane, with simple plain sanitary buildings for the housing of its patients and its employees.

Much depends upon the superintendent of any institution, probably more upon the superintendent of the hospital for the insane. He must be a man of broad mind, qualified for the place by education and experi-

ence. He must keep in touch with all the administrative work of his institution and, at the same time, should be a live factor in the question of the medical care, nursing and re-education of his patients. He must instill into his medical staff a proper spirit of investigation, of systematic case taking, daily examinations and scientific treatment of the patients, and, at the same time, maintain a proper *esprit du corps*. He must maintain a training school for nurses for those patients who require skilled nursing. He must maintain a school for attendants whose chief duty will be the proper guidance of the improvable class in their work and daily life, and of other attendants who shall give the kindest matronly care to those who are hopelessly insane. To aid the superintendent to keep his medical staff on a high grade, the state must maintain a psychopathic institute, or school, where members of the staff may go to be taught the newest methods of the treatment and management of the insane.

FEEBLE-MINDED AND EPILEPTIC.

The mentally deficient comprise a large number which may be brought under the two classes: the feeble-minded and the epileptic. The epileptic deficients are numerous. There is first an improvable class which experience has shown may be benefited and 10 per cent. or more cured, by proper care. This should be upon farms in colonies, and work similar to that outlined for the improvable chronic insane should be afforded them with proper housing, means of amusement, etc.

For the feeble-minded a like institution is necessary with the smallest possible factor of attempts at mental training by the use of books. As with the other improvable mentally deficient and insane, a proper manual training will do more to place these unfortunates in a self-supporting condition and at the same time improve their mental powers as much as may be done.

The insane epileptics and other hopelessly deficient epileptics should also be treated in colonies, but under custodial care. Such colonies may well be closely related with some existing hospital for the insane. Such a colony may be situated far enough away from the parent institution to prevent the disturbance of insane individuals by the convulsions of the epileptics and yet may be near enough to permit of the administration of the epileptic colony by the one institution. The buildings for the epileptics should be so constructed that the patients may do themselves the least possible injury when seized with convulsions.

Let me repeat for fear that I have not been understood, that the improvable epileptics should be colonized on a farm and should be afforded the proper manual training upon the farm and in shops which will improve their general physical condition and thus promote their cure. Such a colony should not be related to any other institution and should be far separated from the hospital for the insane. A colony for improvable epileptics should be small in population, but provided with ample land. For the unimprovable feeble-minded class, institutional, custodial

care which will afford them every bodily comfort and safety is all that can be done. I cannot take the time to speak to you of the responsibility of the state to its dependent blind, deaf, etc.

AWAKENING OF THE STATE.

From what I have said in the foregoing of the present conception of the best modern treatment for the insane and mentally deficient, you may infer that the State of Illinois has not in the past had a proper conception of its responsibilities.

Under the present administration during the last two and a half years, the principles of the modern treatment, as an attempt has been made to describe them in the foregoing, have been inaugurated in this state. The Quarterly Bulletin of the State Board of Charities of the last two and a half years contains in the various numbers the successive steps undertaken to bring about the conditions necessary for the modern treatment of our people. These steps are assembled as part of the nineteenth and part of the forthcoming twentieth biennial reports of the board.

The physicians and surgeons of Illinois have not in the past taken an active interest in the state charitable institutions. It is not necessary that I should attempt to make an argument that the medical profession of the state should be interested in these institutions. The patients and other dependents have been or will at some time be under the care of the various physicians of the state. The early recognition of insanity is necessary, if the individual is to have a chance for recovery quite as much as in tuberculosis. Our physicians, therefore, should be widely awake to the early recognition of mental disease.

A large majority of us never have had the experience of studying mental disease. The state should afford the doctors of the state an opportunity to learn of insanity through the maintenance of clinics in psychiatry in every state institution for the insane. Such clinics would be practically without cost to the state. The medical profession would have an opportunity to learn what insanity is, how to recognize it and how to treat it. Every patient so recognized early, if cured, would be a direct saving to the state.

Each of us should use his influence upon the members of the legislature to carry out the measures brought forward by the State Board of Charities for the improvement of the state's management of its dependents along modern lines, and should also demand of those in authority the establishment of clinics in psychiatry in every hospital for the insane in the state.

DISCUSSION.

Dr. C. W. Lillie, East St. Louis:—Mr. President: I suppose it is true that every doctor in the state receives the *Bulletin of the State Board of Charities*, and I suppose it is also true that a large percentage of them lay it away in a pigeon-hole or throw it into the waste-basket, and never look it over. I have been very much impressed by the last *Bulletin* of the board, and with the statements made therein. The system adopted recently for caring for the insane in the hospitals, those who were formerly in the almshouses, which the Board of Charities has done and is doing, with the exception of 365, as given in that report, shows

that the work is in the right direction, and any physician who has had access to one of the almshouses where the insane were cared for would see the fitness of this change.

I have had a good deal of experience in handling the insane and poor epileptics, etc., and I have found the difficulty in placing the epileptic anywhere has been so great that unless it is a child, which we can get into one of the state institutions, we are absolutely unable to find any place whatever for the epileptic. As Dr. Billings has suggested, ample provision should be made for the removal of those from the hospitals for the insane. It is only, as I believe, the indifference of physicians, and their neglect of their plain duty to urge measures before the legislature and to urge their representatives to put themselves right before the people, that delays action by that body. And when this matter is brought before us in a meeting of this society, the facts given by Dr. Billings should be disseminated throughout the state through THE JOURNAL, and when this is done the matter will probably meet with a better reception than it would through the *Bulletin of the Board of Charities*. I hope no person who attends meetings of medical societies will ever throw away such valuable pamphlets as these Bulletins are. I doubt very much if any of those present would do such a thing; but there are a large number of physicians in the state, many of them political physicians, who do not hesitate to throw such Bulletins into their waste-baskets when they contain matters of great interest, and it is to these we must appeal directly; they are the ones to be urged to insist upon action by the legislature. It is the politicians, and not the men who attend scientific meetings, as a rule, who are able to achieve results, notably the osteopathic measures, which are meeting with such a cordial response by such a large number of our legislators.

Dr. Frank H. Jenks, Elgin:—I want to personally thank Dr. Billings for the way he has presented this matter. He has mentioned that the feeling of the staff of physicians of the hospitals is that great indifference is manifested on the part of the general practitioner to the life and surroundings of the hospital physicians. I can appreciate that because I am on the other side of the board. I can personally vouch for the point that he has brought out, that there is greater interest in the subject by the hospital physicians on account of the establishment of a psychopathic school at Kankakee. We feel that the people are interested in us and through us in the wards of the state.

In regard to the complete care of the insane in the state by the state, I wish to say that the State Board of Charities has worked out a complete plan whereby the state is to assume charge of all the insane in the state, relieving the counties from the care of certain chronic cases, and the plan has been carried into execution in every particular except one. That one link in this chain is the important one. That one link is absent, and the State Board of Charities has not the power to replace it. They cannot provide room for patients without money. The law, which went into effect July, 1907, made it impossible to return cases to the counties from which they came (I refer to the chronic cases). It also provides that the institutions shall be enlarged to meet the increasing demands upon them. That presupposes increased appropriations to make room for these people. We have not those appropriations. What is the consequence. The acute cases are crowded in with those that belong to the class to which our attention has been called by Dr. Billings, and we are thereby hampered in the treatment of acute cases simply because we have not money enough to provide room for the chronic cases.

There is another thing I would like to mention, although it may not be germane to this discussion, but I wish to call the attention of the society to the fact that in some of these institutions we have been trying to create interest in the subject of insanity, particularly in the local medical societies, by giving clinics. You doubtless remember what a hubbub was created two or three years ago when we began giving clinics. They were stopped, and we felt that the brakes were put upon the wheels of progress by that thing. We had hoped by

those clinics to create an interest in the subject of insanity and make the general practitioner more familiar with it, and through him give back to the people a little more for their money than they had been receiving.

Dr. Frank P. Norbury, Jacksonville:—Mr. Chairman: I am sorry that I did not hear the full paper of Dr. Billings, but I feel that I would not be doing my full duty if I did not lend my endorsement to all of the good and constructive work the Illinois State Board of Charities has done and is doing. For one who comes in contact with the clinical side of mental disease, both privately and publicly (the latter in our state hospitals) to refrain from expressing appreciation of the wholesome advancement being made in our state, he is failing in his civic duty to say nothing of his lack of appreciation of what this all means to the confidence being created in State Service in Psychiatry. The progress in state institutions is largely along clinical lines, and by this expression I mean all that contributes to the betterment in treatment and care of the mentally afflicted. It is the duty of the medical profession to become interested in this progress and each member of this society should avail himself of every opportunity to acquaint himself with this improved service. Especially should the profession become familiar with modern methods of treatment of acute mental disease; first, their housing, segregation, individual treatment by rest methods, hydrotherapy, occupation methods, recreation and educational means; and second, but to me the greatest in its ultimate purpose, the encouragement of prompt and early first-aid treatment, by opening the doors more readily to the incipient and borderline mental conditions.

Illinois will soon be able to offer comparisons in state service with that of any other state. Comparisons now show that we are not very far behind. We have started right, thanks to the broad policies of the State Board of Charities; but, to keep on, we need the value of the potential powers of the organised medical profession, which rightly should be back of the state service in carrying on new and constructive work. New York is doing a great work because of the systematic and thorough organization of its clinical work. Maryland is organizing, through the help and cooperation of Dr. Adolph Meyer, who is to be the head of the psychiatric clinic at Johns Hopkins. Dr. Meyer, originally an unappreciated worker in Illinois, found his field ready for him in New York; he made good and now goes to Maryland to develop the first university clinic in this country and to start Maryland right in her fundamentals of organization.

The time will come when medical schools in the West will have organized clinics, conducted along medico-psychologic lines. This suggests the fact that academic training must precede the medical course, if the benefits to accrue to clinical medicine are to go beyond our present incomplete training, and it is for our state to say, through its organizations, what that training shall be.

We need more such practical discussions as Dr. Billings has given us. These discussions should come from the profession, from the superintendents, the physicians concerned in state work. They ought to be here as active members of this society, to lead us in these subjects. We are so engrossed with internal medicine, operative surgery, etc., that we forget there is a sociologic aspect to medicine; we forget there is a civic duty we owe to the state by reason of our special medical knowledge; we forget that the State has a claim on us which is just and right and let us therefore acquaint the profession, acquaint the people with the necessities and demands of the dependents whose destinies, when wards of the State, the State Board of Charities directs.

Dr. C. Hubart Lovewell, Chicago:—I do not rise to discuss this subject either from the standpoint of an alienist or a practitioner of any special experience, but there is one thought that occurred to me during the reading of Dr. Billings' paper, and it is this: We as physicians should feel particularly thankful that we have men in the profession at its top who are willing to give their time toward the adjustment and rearrangement of these matters of State charities. I do not think any of us fully realize the financial loss to those men who have devoted so much time and energy to this noble work. I believe this State society can help the State Board of Charities very much in the conduct of its work, and it occurs

to me that a discussion of such problems as have been brought before us is eminently proper in a State society meeting. I think the rank and file of the society should go home to-morrow and with a definite purpose in view of writing their legislators and ascertaining exactly their position as to whether or not they are friendly to our State institutions solely as a means of distributing patronage. If we find that such men are not interested in the State institutions and in the interests of the people, then we should see to it that when election comes the right kind of men from our respective districts are sent to the legislature. I think doctors can take part in such matters with a great deal of propriety. We should take more interest than we do in matters of politics. We can point with considerable pride to the record which one of the members of our profession made in the State of Ohio, namely, Dr. Charles A. L. Reed. Many members of the profession and politicians will always remember Dr. Charles A. L. Reed's record. I believe that in each county society a man should be selected by the doctors as one who can represent his section of the country in regard to State matters and see to it that those matters are settled rightly. Many things are not being done on account of lack of appropriations for the proper carrying out of the work, and legislation is being blocked because of quibbling over the matter of patronage.

Dr. Frank S. Churchill, Chicago:—I have been very much interested in Dr. Billings' paper, and particularly with regard to what was said regarding economy in the conduct of these institutions. This is especially true with regard to the improvable epileptics. To get down to statistics, it might be well for us all to go to these legislators, as Dr. Lovewell has suggested, and point out to them what has been accomplished by the New York Colony for Epileptics, which is the best one in this country. It has been shown that the average cost to the State is $30 per patient less than for patients in the other public institutions. We should point out to our representatives that by segregating the improvable epileptics in the colony, and giving them so much productive labor to do, it will be an actual saving to the State by the establishment of such an epileptic colony. I think all of us should appreciate the splendid and noble work the State Board of Charities is doing, and we ought to back them up in every way possible and serve notice on our representatives that the medical profession wants their recommendations carried out and they must do so.

Dr. Billings (closing the discussion): There are two or three things I want to speak of if you will bear with me for a short time. With regard to the epileptic question, of which Dr. Churchill spoke, many of our physicians do not comprehend the movement which should be carried out. In the State institutions there are over a thousand insane epileptics, and there are over three hundred feeble-minded epileptics in Lincoln. These people are not improvable. Once an epileptic becomes insane, that is the end. There is no improvement from that on. He may be housed and be removed from other people who do not have fits, so that he will not disturb them. If we are to segregate the insane and improvable epileptics, we should put them where they are so separated as to be in colonies by themselves, but yet administered to by the same institution. It has been estimated that there are ten thousand epileptics in the State of Illinois, most of them improvable. The State should take care of some of these people; it cannot very well take care of them all. It ought to have a farm where these people may work out-of-doors, that is, the improvable epileptics. The State Legislature in 1908 passed a bill for the establishment of a colony for epileptics, but since that time there has been very little done in reference to its establishment, and the doctors have not asked them to do so. The medical profession, with its energies united, could help us very materially in settling these State matters.

Two years ago, through the advice of the State Board of Charities, the Elgin Hospital for the Insane offered clinics to the members of the Fox River Valley Medical Association. The Governor thought these clinics were fine things. He said to me, We must publish a notice of them in the newspapers, because then the doctors will be pleased; but, I said, if it is published, it will give a certain notoriety to some people, and somebody will object to it. I suggested keeping it

quiet, but to go on with the clinics. What was the result? The Speaker of the House got out of his chair in the last legislature, and introduced a resolution himself objecting to the giving of clinics in any State institution, and consequently they were forbidden. In a meeting of the Chicago Medical Society, following this matter, I was present, and in spite of my protest, a vote of thanks was extended to Mr. Shurtleff for the things he had done in the legislature. The doctors stood idly by at the next election and let that man go in.

I am not appearing before you to receive any compliments as a member of the State Board of Charities. The work has not been unpleasant, because it has been a sort of a fight all the way through (laughter), and there is nothing I love better than a fight, provided I think I am on the right track. The eight thousand doctors in this State can accomplish a great deal if they will bring their influence to bear on matters of legislation looking toward the betterment of the condition of the unfortunate people of the State.

Dr. Lovewell has said that it is right for doctors to be in politics. I am not in politics. But the thing I am attempting to do, and that Dr. McAnally is attempting to do, is to steer as clear of politics as we can. We want to be so far on the other side as to exert our moral influence in the disposition of matters of state. The moment we become political, our influence is gone. If I continue in this work, I hope you will not consider me in the light of a politician, because I get up before you and talk about these things. (Applause.)

THE PROBLEM OF THE BLIND FROM THE DOCTOR'S STANDPOINT.*

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From every standpoint the problem of the blind is complex and difficult. There is no other sense, the loss of which, leaves the victim so helpless. A very large percentage of the blind, therefore, notwithstanding the manual and industrial training afforded by our schools, become dependents upon society.

Blindness is a social problem. It is of vital importance to the state, since it produces a class of dependents who otherwise might be productive citizens. The state, therefore, has an economic interest in the prevention of blindness. The cost of blindness is heavy and can only be approximated. It has been roughly estimated that a person blind from birth and dependent through life will cost the state $10,000. For several years our state has maintained two institutions for the blind—a School for the Blind at Jacksonville and an Industrial Home in Chicago. Besides these we have another closely related and of the greatest value as an institution for the prevention of blindness, the Eye and Ear Infirmary of Chicago. The biennial appropriation recommended for the maintenance of these institutions gives but little idea of the cost of blindness

* Read at the Fifty-ninth Annual Session of the Illinois State Medical Society, Quincy, Ill., May 18, 1909.

to the state, for it does not take into consideration the productive loss occasioned by total and partial blindness nor the many semi-public and private charities in behalf of the blind.

Blindness is a world-wide problem. It is found in every country and in every community. In Holy Writ it is said, "The poor ye have with you always;" and we may as truly say, "The blind ye have with you always." But blindness is not confined to the poor. It is a scourge upon all classes. It is doubtless true, however, that blindness is most prevalent among the poor. This is accounted for by reason of insanitary conditions, the want of high-class obstetric service and the dissipation of such means as they may have had, in trying to preserve their sight.

An estimate based upon such statistics as we have had and the most reliable statistics in other states places the number of blind persons in Illinois at 5,000. According to the report of the commission recently appointed by our State Board of Charities to inquire into the condition of the blind in Illinois, blindness is on the increase in this state. Quoting from Dr. Wilder's paper embodied in this report:

In 1870 there were 1,042 blind, or 41 to every 100,000 population.
In 1880 there were 2,615 blind, or 85 to every 100,000 population.
In 1890 there were 2,835 blind, or 74.1 to every 100,000 population.
In 1900 there were 3,767 blind, or 78.1 to every 100,000 population.

"It is admitted that these figures may be somewhat misleading and not altogether proper for comparison, because of the different methods pursued by the census takers of different decades; but they are at least suggestive, indicating as they do that blindness is not materially decreasing except as between 1889 and 1890, but is rather slightly on the increase."

In the matter of reliable statistics, a most important consideration in the study of every social problem, we are lamentably deficient. We greatly need a complete census of the blind in this state—one that would give us detailed information as to the condition of the blind, the occupations of the blind and more exact knowledge concerning the prevalence and causes of blindness.

Such a report would enable us to tabulate the 5,000 cases of blindness in this state and to determine, in a measure, the number due to diseases that may be prevented or may be relieved by treatment.

From a professional standpoint we are interested chiefly in the causes and cure of blindness. Nothing appeals to our sympathies more than does the blind child. Especially does it appeal to the physician, for he knows that many, very many, are needlessly blind. It is well known that a large proportion of all blindness in children results from ophthalmia neonatorum and blindness from this cause usually means blindness from neglect. In the schools for the blind in the United States we get the most reliable statistics concerning the causes of blindness, and we find that more than 25 per cent. of the pupils have lost their sight from infantile ophthalmia, an infectious disease—and therefore a preventable one. In

the School for the Blind at Jacksonville, this state, the superintendent, Mr. Jones, states that infantile ophthalmia furnishes about one-third of his pupils.

"It is an astounding fact, one not generally known," as forcibly stated by the New York Association for the Blind, "that one-quarter of all the blind children in all the blind schools of this country are unnecessarily blind." Such a statement ought to command the attention of the medical profession, and would seem to indicate that ignorance and carelessness are robbing many children of their natural birthright of sight. Who is responsible? The medical profession cannot escape a share of the responsibility, because it knows the nature and the mode of infection which produces ophthalmia neonatorum and how to prevent it. In the light of our present knowledge of this disease, to permit such an infection ought to be classed as criminal where reasonable preventive measures were not adopted.

It is not the purpose of this paper to discuss the symptomatology or treatment of this disease, but I desire at this point to consider briefly what may be termed reasonable preventive measures for the general obstetrician in private practice. The value of the well-known Credé method of prophylaxis, which consists of dropping into each eye of the new-born babe 1 minim of a 2 per cent. solution of silver nitrate, has been well established. Twenty-eight years ago this important discovery was given to the profession. Where it has been adopted as a routine measure in lying-in hospitals the percentage of ophthalmia neonatorum is practically nothing. But that it has not come into general use in private practice is indicated by the fact that ophthalmia neonatorum still remains the chief factor in the production of blindness in the young and causes 10 per cent. of the blindness of all ages. Notwithstanding its recognized efficiency as a prophylaxis against a serious infection, the Credé method will probably never be used very generally among private patients for the reason that it occasionally produces a conjunctival inflammation, which, though it may not endanger sight, is sufficient to cause the physician to reject it as a routine practice. This objection, however, does not hold against the newer silver salts. A 25 per cent. solution of argyrol or a 5 per cent. solution of protargol does not irritate or produce pain. Likewise Zweifel has extolled the value of silver acetate as a prophylaxis in ophthalmia and less objectionable than silver nitrate. The comparative value of these remedies has perhaps not been fully established, but it should be added that many ophthalmologists recommend a 1 per cent. solution of silver nitrate. The use of one of the silver salts would be indicated in all cases where there is a possible suspicion of gonorrheal or other infection.

The possibility of infection of the eyes of the child at birth should always be borne in mind by the obstetrician and the dangers of subsequent infection from careless bathing, soiled towels or sponges and unclean hands should be impressed upon the nurse. While the gonococcus of Neisser is recognized as the usual cause of the more virulent types of inflammation, it has been demonstrated that infantile ophthalmia may

be caused by various other micro-organisms. Hence any mucopurulent vaginal discharge, whether it contain the specific germ or not, should be considered dangerous to the eyes of the new-born babe. Cleanliness, therefore, is of the first importance. Everything that is brought in contact with the eyes of the child should be absolutely clean. As soon as the child's head is delivered, preferably before the eyes have opened, the eyelids and adjacent parts should be cleansed of mucus, blood and meconium. This is best done with small pledgets of cotton and sterilized water or a saturated solution of boric acid, using a separate pledget for each eye. As soon as possible after delivery the child's eyes should be wiped clean, care being taken that this is thoroughly done, and in the manner above stated. Following this, when indicated, a silver salt solution should be instilled. In all cases where the birth canal is known to be infected, and in all other cases where infection of the canal cannot be positively eliminated, the silver salt should be used.

Before leaving a case of confinement the physician should give instruction as to the importance of immediate notice being given if the eyes of the babe should become inflamed. Delay in such a case and the use of simple home remedies should be characterized as dangerous and pernicious. Many eyes are sacrificed which might have been saved if prompt and appropriate treatment had been given.

In this connection I wish to call attention to an Illinois statute for the prevention of blindness. It reads as follows:

SECTION 1. Should any midwife or nurse having charge of an infant in this state notice that one or both eyes of such infant are inflamed or reddened at any time within two weeks after its birth, it shall be the duty of such midwife or nurse having charge of such infant to report the fact in writing within six hours to the health officer or some legally qualified practitioner of medicine of the city, town or district in which the parents of the infant reside.

SEC. 2. Any failure to comply with the provisions of this act shall be punishable by a fine not to exceed $100 or imprisonment not to exceed six months, or both.

It will be admitted, I think, that the largest percentage of ophthalmia neonatorum in this state occurs in the practice of midwives, and the enforcement of the existing law would be effective in saving the sight of many helpless infants. But our State Board of Health tells us that an adequate enforcement of the law is impossible, but that much can be done toward its enforcement if it can secure the cooperation of the physicians of the state. Such a request is reasonable and should be readily granted. Moreover, our present law should be amended so as to require a higher standard of qualification for the practice of midwifery and requiring the yearly renewal of license and registration. In addition to the present requirement to report promptly every case of inflammation of the eyes, midwives should be qualified and required to use some prophylactic against ophthalmia neonatorum under the direction of the State Board of Health.

Ophthalmia neonatorum should be stamped out. Much has already been done, but really effective work has hardly begun. It is a work in

the interest of humanity, as well as the honor of the medical profession, whose responsibility is most pronounced. During the last two years the American Medical Association has assumed the leadership in this country in a crusade against this disease. Medical organizations, state boards of health and philanthropic societies are joining their forces in a growing movement under the wise direction of the Committee on Ophthalmia Neonatorum of our national body. The committee's recommendations may be briefly summarized as follows:

1. Registration. The enactment of laws requiring the registry of births and placing the control and licensure of midwives in boards of health.

2. Education. The distribution of circulars of advice to midwives and mothers as to the dangers, method of infection and prevention of ophthalmia neonatorum.

3. Preparedness. The preparation and distribution by health boards of a chosen prophylactic, with specific directions as to its use.

4. Cooperation. Organized and concerted effort throughout all the states of the Union in carrying these provisions into effect.

The methods and views of the committee have been endorsed by a majority of the state medical societies, as well as by the American Public Health Association and the National Congress of Mothers. The medical profession of Illinois should lend its unqualified support to this movement.

Another phase of the blind problem of especial interest to the physician relates to an occupation for the blind. Massage as a suitable occupation for the intelligent blind persons of both sexes should receive more consideration by our profession than it has heretofore received. That the blind make competent masseurs has been satisfactorily proved, both in this country and in England. Several years ago there was founded in London an institution for massage by the blind for the purpose of developing a new occupation for the blind in England. It received the hearty endorsement of many eminent physicians. Their operators are carefully selected as to personal appearance, health and general fitness. They hold certificates of efficiency in massage before they seek employment from the public. In the proceedings of the International Conference of the Blind held in Edinburgh in 1905, the secretary of this institution is quoted as saying: "The first essential in any work to secure lasting success is to do it well. They do it well. As there is an increasing demand for what is well done in every profession it must clearly be to the public advantage to employ the blind as masseurs and masseuses."

Pupils from the Missouri School for the Blind have been taught massage and practice it with success. The superintendent of this institution, Mr. S. M. Green, writes me as follows: "I consider it (massage) one of the best occupations for those adapted to it that it is possible to teach the blind. One of our pupils was a boy and the other a girl, the latter being particularly acceptable to her women patrons. The absence of sight is regarded by many as an additional qualification for this work."

Dr. Robert C. Moon of Philadelphia, who speaks with the authority of an expert upon all questions relative to the welfare of the blind,

writes me concerning the subject, saying: "Massage is being practiced here (Philadelphia) successfully by the blind and several pupils are under instruction in massage at our Orthopedic Hospital. Many come from distant parts of this and other states to study here, and I believe the blind graduates are uniformly successful in practice; but no great advance will be made until the medical profession understands that the blind make good masseurs and the doctors recommend them to their patients."

Illinois, with an approximate population of 5,000 blind, with three state institutions maintained at great expense for the welfare of the blind and those threatened with blindness, with the hospitals and facilities for instruction afforded by a great city, has done nothing along this particular line of philanthropic work. What we need is awakened interest, adequate information and organization. We should have a permanent Commission on the Blind, with authority to make a complete census, giving us more exact data than we now have as to the number, their location and the condition of all blind persons in the state. Such a commission should make a broad and comprehensive study of the causes that produce blindness and the method of prevention, studying likewise the occupations of the blind that they may enable these unfortunates to lead the most useful, happy and independent lives. Furthermore, the commission should coordinate all agencies seeking the welfare of this class.

In conclusion, permit me to suggest the advisability of the appointment by this society of a Committee on Ophthalmia Neonatorum, which committee, acting under the direction of the national committee, shall be responsible for the work throughout the state and shall act in cooperation with the State Board of Health, health officers and the County Medical Societies of the state for the suppression of a disease which darkens the life and blights the hopes of those who are its victims through no fault of their own.

DIAGNOSIS OF FRACTURES.*

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CHICAGO.

The diagnosis of fractures offers frequently as great difficulties for the surgeon's consideration as is experienced in many other and far more serious affections. If there is any truth in the maxim that "Every case is a law unto itself," it applies nowhere more fittingly than in the surgical subject now before us. The very foundation of rational therapy in the treatment of any disease is based almost wholly on a clear and comprehensive understanding of the real nature of the disease itself; the end results of all surgical work hinge upon the thoroughness and correctness of the diagnosis.

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* Read at the Meeting of the Chicago Medical Society, Oct. 13, 1909.

Without a definite aim in view in the application of surgical principles such as must obtain with the diagnosis unsettled and unknown, conditions under any therapeutic measure are not always improved; not infrequently are made more serious and grave, and under these circumstances opprobrium and discredit are the regards of the surgical treatment.

Modern methods of diagnosticating, as well as treating fractures, have revised our knowledge of this entire and interesting subject. The *x*-ray has proved an invaluable aid in determining practically all obscure traumatic bone lesions. The exploratory or operative treatment of fractures is destined to become a more popular method not merely for adjusting broken bones after determining the type of fracture, but for estimating also the extent of other injuries at the site of fracture. With these two valuable aids, now so instructive and unfailing in their use, the responsibility for bad results in the diagnosis and treatment of fractures will not in the future rest as lightly on the surgeon's shoulders as it has in the past. A carefully and correctly taken history of any fracture, the right interpretation placed upon any signs that may be present will justify a correct diagnosis in a large per cent. of fractured bones; any doubt remaining as to the diagnosis under these circumstances may be settled by a radiograph furnished and correctly read by an expert in this work. While this diagnostic aid closes any argument as to the presence and type of fracture, a small class of cases will still be encountered, which calls for another step in a diagnostic way now becoming popular as a means of treating fractures. I refer to the operative treatment which is so ably defended by those whose experience with it has been the greatest.

For a short study of this part of the symposium three, somewhat arbitrary, subdivisions of the subject appear to provide the clearest view: 1. Diagnosis of any fracture occurring in superficiallly located bones, or bones accessible to satisfactory palpation. 2. Diagnosis of fractures in deeply located bones, or any bone removed from easy or satisfactory palpation. 3. Diagnosis not alone in these two classes, but the diagnosis in all cases of any injury sustained by important structure, as blood vessels, nerves, or muscles in relation to the fractured bone.

In the first class, or the superficial bone, displacement of the broken fragments may be readily seen and felt; the classical signs of a fracture are, as a rule, here noted, but the surrounding soft tissues are generally uninjured; subcutaneous hemorrhage is, as a rule, slight, and swelling, therefore, is inconspicuous. Reposition of the broken bone ends yields to very slight manipulations and some simple immobilizing apparatus securely holds the bone pieces in the desired position. Fractures belonging to this description are the simplest fractures; fractures which may often be diagnosticated and treated without the radiographic pictures, and with the simplest mechanical devices.

In the second class of cases, the location of the bone beyond the reach of the examining hand, makes for uncertainty in attempting a

purely bed-side diagnosis. Among these, the femoral neck, the humeral neck, with other long bones especially near the joints, often present serious obstacles to a diagnosis. In children, fractures in the ends of long bones simulate epiphyseal separations or dislocations, with which they are frequently complicated, especially the latter, in both children and adults. Outside of the bone lesions in these cases much damage is often suffered by the circumjacent soft tissues, ligaments are ruptured, muscles lacerated, producing hemorrhage into and around the joint sufficient to obscure many of the anatomic landmarks. Many signs of fractures may be absent in these cases, and for a diagnosis, the *x*-ray, which has in the last few years revolutionized the subject of fractures, is the next most likely way of making clear the character of the injury.

While the skiagraphic examination will, after all other methods have failed, set at rest all these points regarding the solution of continuity in the bone, it does not always suggest the surest and best course in the subsequent treatment; it does not show the presence or character of complicating injuries to nerves, blood vessels, or other structures; it may indeed prove misleading, if not well taken, and correctly read, by one competent to do this. In this, the second class of cases presenting these concomitant injuries, there is another means of making a diagnosis which, as has been stated, may be put also to excellent use in treating the fracture. Reference is made to the exploratory operation which is becoming, I think, a method of treatment in fractures superior to any other hitherto employed; a method superior to any other because it makes clear, certain and sure, the exact diagnosis in the bones and other tissues alike.

In the third class of this subdivision, or the diagnosis of injury other than that of the bone, the exploratory diagnosis is the only one to be considered. In less time than it requires for reading this paragraph this method discloses all the evidence needed for efficient treatment. Besides the ready diagnosis, the wounded extremity is placed in that condition which is most conducive to prompt healing; the extravasated blood, which is always more marked than is apparent, can be drained away, thereby immediately diminishing the swelling, without the likelihood of further embarrassment to the circulation. The limb is at once reduced to the normal size removing all fear of too great or dangerous pressure by the permanent dressing.

In the minds of most medical men, fractures receive less consideration by far than do many other surgical problems of much less importance. The subject is old and hackneyed, and appeals to some surgeons with less interest than the restoration of the supposed lost perineal support or the removal of that ever-present scar in the cervix uteri. Be it said to our shame that the treatment of fractures to-day is not different in many respects to that recommended and employed in times long past; it is the purest routine work in the hands of some of us, as most hospital records will abundantly show. More time is frequently given to the understanding of complicated and cumbersome appliances recom-

mended for treatment of fractures, than is directed to the study of the diagnosis of fractures, or of trying to determine the *real* indications for treatment.

It is not an uncommon thing to see the Velpeau or Desault bandage elaborately applied to patients with the idea of successfully fixing the fragments in a broken clavicle, yet no instance now comes to me in which I ever knew either of these methods to hold in reduction this very simple fracture. Once the importance of always making a correct diagnosis in any and all fractures is recognized present day methods of treating them will not long endure. Two similar fractures in different individuals may have many points in common, as regards the type of fracture and complicating injuries; yet call for a very different line of treatment, if results in the two instances are to be equal.

Unsatisfactory results in the treatment of fractures are often ascribed to some peculiarity in the reparative process not clearly or definitely known. The truth of the matter is that no such contention should be allowed, as it is almost invariably the result of failure on our part in not recognizing the true line of treatment such cases call for.

Stuart McGuire,[1] in a recent article on "Ununited Fractures," points out that some of our ideas on this branch of work are a century old and as useless now as then. He endeavors to show, for instance, by four facts, why bad results in treatment of fractures of the femoral neck are not due to a lack of or enfeeblement of the reparative process. These facts are: 1. Completely detached fragments of bone at other localities such as a disc removed by the trephine, take an active part in reparative action. 2. Post-mortem examinations in cases of fracture of the neck of the femur show that the upper fragment not only retains its vitality, but in a majority of cases exhibits evidence of a callus formation. 3. In cases of fracture where inspection has occurred bony union will almost invariably result, if the fragments are permitted to remain in apposition for a sufficient time. 4. In experimental cases produced on lower animals bony union was the rule when the fragments were held in position by direct fixation with a nail or screw, while in the control cases not treated, no union except of a ligamentous nature was ever observed.

These points seem well taken and are applicable to fractures other than the femoral neck. The key to good results is, of course, the proper treatment which, after all, is the succeeding step to an unerring diagnosis. A correct interpretation of all fractures or of any fracture will frequently lead to treatment so simple that its complete fulfillment will follow the use of a simple roller bandage or a strip of adhesive plaster.

As a further step in demonstrating the importance of always making a diagnosis of the presence of a fracture regardless of the circumstances

1. International Journal of Surgery, Sept., 1909.

or type of injury, allow me to mention in the briefest manner three fractures, with skiagraphs, now under my observation, two of which did not in any way suggest the actual condition.

The first skiagraph (Fig. 1) shows a fracture of the base of the third phalanx of the ring finger of the left hand. This occurred in a woman of about 30 years of age. She seized hold of a door-knob for the purpose of opening the door; the effort to accomplish this was slight, but rendered her hand immediately helpless. An examination the following day did not reveal a sign of fracture, but the radiograph tells the true story.

The second case (Fig. 2) is that of a young man, who received an accident which was sufficient to crush the entire limb. The evidence of a fracture, with the exception of the swelling, in this instance was not present; yet the skiagraph here, as in the previous case, calls for no further speculation on this point.

The third case (Fig. 3) is that of a man about fifty, who received no violence of a direct nature. This man stepped from a street car and after walking the distance of three blocks was unable to go further. An examination showed a wide separation of two equal parts of his left patella, due to a transverse fracture. The *x*-ray merely confirms the diagnosis, which in this instance was plain.

The citation of these three cases is merely to show, especially the first two, the possibilities of error in diagnosticating the presence of a fracture of its type, if recourse to every expedient in this work is not made use of; the third case shows the apparently slight degree of force sometimes sufficient to produce a fracture.

It must be admitted, of course, that a large per cent. of fractured bones are restored to a fair degree of future usefulness, with the present methods of procedure in the diagnosis and treatment; but taken as a whole, a fair per cent. of fractures show results deplorably bad; so bad, in fact, that it has led to some severe criticisms from leaders in our profession. Maurice Richardson has said that "Surgeons of the highest skill feel more anxiety in the treatment of fractures than in any other injury, and that few can, without humiliation, review their results." Lane regards "the present day methods as generally employed in the treatment of fractures, a disgrace to surgical practice."

While these statements may be somewhat radical for the unanimous endorsement of conservative medical men, there is no difficulty in verifying, at least in part, that they contain elements of truth. We should ever bear in mind that it is the occasional case, in which a mistaken diagnosis has been made and consequently useless treatment employed, that is responsible for the censure and criticism laid at the surgeon's door in this neglected field of work. Fifty individuals with perfect results in their fractured bones, are much less paraded and talked about

in any community than is a single case treated with imperfect or bad desult. As McGuire says, "A man who dies after a surgical operation is buried and soon forgotten; but the man who has a deformed arm or shortened leg from badly treated fracture lives for a generation, a walking or limping advertisement of surgical limitation and incapacity."

What, then, are our duties towards an individual coming under our care with a supposed fracture? What is the manner of procedure particularly with reference to establishing the diagnosis of the fracture and its oftentimes associate injuries? It will be found, I think, that the number of methods or procedures in this regard will equal almost the number of varying types or kinds of fracture.

Fractures are sustained in practically all instances by varying degrees of violence; and generally by such a high degree of violence that the bone is not sufficient to arrest the vulnerating force and in consequence, injury other than that of the bone is produced, either at the seat of fracture or parts removed from this. The complicating injuries may be far more serious than that of the bone injury itself, and may be so grave in fact that attention in any way directed towards the fracture is out of the question.

The first duty of the surgeon, therefore, in assuming charge of a patient with a fracture, is to determine the presence or absence of other lesions besides the one of the bone. In the absence of these complications, the next step is the fracture, which rarely demands or calls for a hurried diagnosis. To handle or manipulate a recent fracture, unless it is in a purely subcutaneous bone, where the slightest palpation will furnish all the desired information, is a great mistake; the hemorrhage at the seat of fracture occasioned by this maneuver is increased, swelling and edema quickly supervene, the patient's pain is greatly intensified, and above all, little or no information is obtained. It is well enough to keep keenly active one's diagnostic acumen, but to do this by aimlessly manipulating the broken bones of unfortunate human beings is, to say the least, bad practice.

After having applied some improvised and simple dressing to the fractured extremity that will reduce to a minimum all movements of the limb, transport the patient to some reliable Roentgenologist, whose correct reading of a perfectly taken radiogram will then, and not till then, suggest the manner in which further manipulation, if at all, may be justified. Even then, unless a few days have intervened, indiscriminate juggling with the broken bones is not entirely free from danger. Fractures located in the shafts of long bones, superficially placed, are usually recognized in most of their peculiarities by these methods, plus the evidence furnished by the *x*-ray.

The fractures which are covered by large muscular masses, and those in close relation to joints are the instances in which great care should be

exercised that gross errors are not made in the diagnosis. As in the former class of cases, these should never be subjected to rough handling for reasons before given; the diagnosis is not possible by such methods, and the only thing to commend such a procedure is the idea, popular among people with broken bones, that something is being done; a notion not infrequently shared by the attending surgeon.

The differential diagnosis in this class of fractures is more difficult in children because of the ease with which they are mistaken for dislocations and particularly epiphyseal separations. For recognition of the latter injury familiarity should be possessed regarding all the anatomical peculiarities of the epiphyses. The time ossification occurs in these different pieces of bone should be known, and one should have made a thorough study of the radiographic pictures taken before, at the time, and after, the bone centers appear. For a comprehensive study of these conditions I know of no work better than that of John Poland on "Traumatic Separation of the Epiphyses," to which attention is directed. In fractures in these localities occurring in children, many of the signs are notably absent. *X*-ray pictures should be taken of the injured part, showing a lateral as well as a front to back view. It is, moreover, a great help to have the same views in radiograms of the other extremity at the same locality.

Should this evidence, together with that obtained by the commoner means of making a diagnosis, prove insufficient for reaching rather definite conclusions as to the nature and extent of the injury, the only alternative is that method which rarely fails in demonstrating the nature of most things surgical. The exploratory incision is a safe, sound and reasonable mode of procedure. It can be carried out equally safe in fractures of the diaphysis or epiphysis, and the opening of a joint, if need be, is attended with no more uncertainty as to the outcome than that of the peritoneum. Both are simply large lymph spaces and when explored in accordance with aseptic surgery, as we understand it now, rarely, if ever, fail to show a *quick* and *prompt* restoration to normal function.

Personally my experience with the operative method of diagnosticating and treating fractures has been limited; but this experience, small though it be, has made the diagnosis so plain, the subsequent treatment so clear, and the results so satisfactory, that I have much regretted not having used it oftener. The procedure seems so safe, so rational and surgical, that one's conscience is not eased or relieved in contemplating some of the results obtained under other lines of procedure.

I believe, if we will exclude the vermiform appendix, the uterine appendages, and the acute obstructions occurring at the stomach's outlet, that the diagnosis of acute intra-abdominal conditions is very often the purest guesswork. I believe that the diagnosis by the ordinary laboratory and clinical methods in the greater per cent. of cases is beyond man's ability to reach with certainty. Nor is this a discouraging outlook, because the exploratory laparotomy makes an open book

of practicaly all the affections falling under this category, to the end that experienced and up-to-date surgery meets amply, and generally safely, all indications presenting themselves.

Is it less surgical or sensible to make use of the same radical interference for the elucidation of a puzzle about equal to that of the abdominal affections? The direct exposure by surgical means of a fractured bone is not as some have said the conversion of a simple into a com-

Figure 1.

pound fracture. Compound fractures follow, as a rule, great violence which crushes and devitalizes much of the surrounding tissues, invariably filling the open wounds with deadly pathogenic organisms. The broken and jagged ends of the bones often protrude or are driven through the skin, the clothing and frequently into the ground, gathering so much infectious material that no amount of effort can satisfactorily cleanse the wounds.

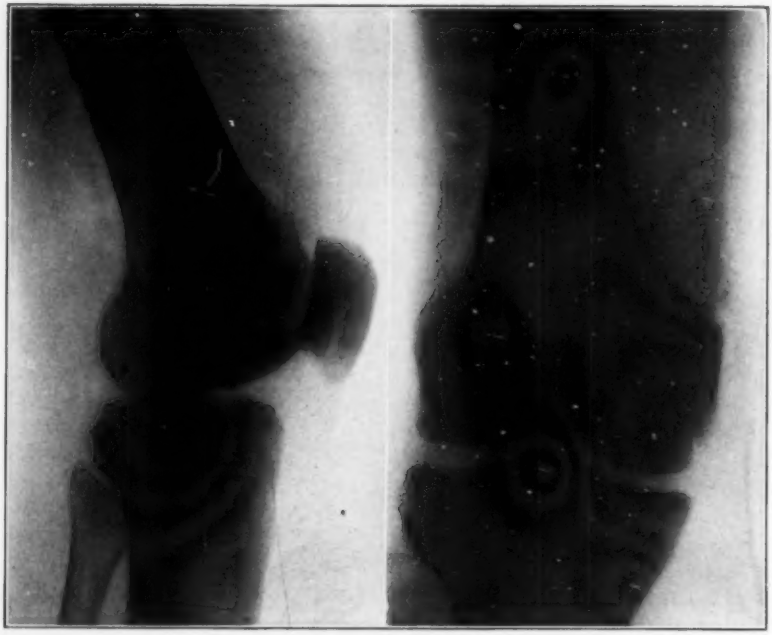

Figure 2.

Figure 3.

The exposure of the seat of a fracture by surgical interference does not, then, produce a compound fracture in the common acceptation of that term; it is a surgical operation which is accomplished by carefully opening with all possible skill the skin, splitting or pushing aside muscles till the bone is reached through a field rendered perfectly clean and sterile. Instead of a wholesale mutilation of all structures in the extremity, as results from an accidental injury, the surgical exposure of a fracture discloses without trauma and without injury to any structure, all knowledge of the nature and extent of a fracture, together with similar knowledge of all complicating injuries.

Let us remember that this step, now regarded as useful by many in the treatment of fractures, should be one viewed in the light also of an important diagnostic aid; that the near future may place it beside the other useful, but sometimes unreliable, methods of determining the nature and character of fractured bones; and that this department of surgical work may prove at least no less interesting than other departments of surgical work, of less, or of no greater importance.

100 State Street.

RARE CASE OF PEMPHIGUS REQUIRING SURGICAL ATTENTION.*

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DANVILLE, ILL.

In presenting this case for your consideration I expect to be as brief as possible in giving an epitome of the case. I do not expect to discuss pemphigus as a disease, but rather to present this one case, giving the symptoms as I have seen them, going over it as carefully as possible.

Definition.—Pemphigus, according to Stelwagen, "is an acute or chronic bullous disease characterized by the formation of scanty or numerous irregularly scattered, variable sized, rounded or oval blebs, arising from an apparently normal or moderately reddened skin, and which may or may not be accompanied by mild or severe constitutional disturbances." I do not expect to give you numerous varieties or types of this disease, but will start in with the history of the case, as follows:

History.—J. B., an unmarried, white female, aged 28 years; no occupation; father living, age 60, healthy; mother living, age about 60, good health but nervous; two sisters died in infancy; one sister living and well, neurasthenic; two brothers living, well; one aged about 29, adjudged insane four years ago. Treatment administered for about six months and then pronounced cured. Other brother aged 23, is strong and well mentally and physically. One sister, who died about three months ago was mentally deficient from sixteen to twenty-six years of age, at which age she died. There is no history of specific disease nor tuberculosis elicited in any member of the family. This patient has never been well. At eight years of age she had an inflammation of the bowels for about one year; has always been very nervous and poorly nourished. was under the care of a physician almost constantly for five years from 1895 for a "nervous prostration," She began menstruating at fourteen years of age; was regular for

* Read at the Fifty-ninth Annual Session of the Illinois State Medical Society, Quincy, Ill., May 19, 1909.

about one year, then began to be irregular and have pain; from 1900 until October, 1908, the periods were regular and without pain; the latter date they disappeared.

Symptoms.—She came to my office September 26, for me to dress a small burn, which had caused a blister about as large as a ten cent piece on the right forearm, flexor surface; about two days later, a series of small blisters appeared down the arm towards the wrist. She also exhibited a series of scratches on the left forearm, left upper arm, and four three-inch long scratches over the chest between the breasts. These scratches seemed to have been made with a pin or needle. She denied any knowledge of them, saying possibly they were made while dressing. The day following, however, she had the right hip covered with scratches, which she claimed to have been made by a cat. I then became suspicious that it was a case of "factitious dermatitis" or one of "self-inflicted injury," and advised the relatives to watch her closely. Within a few days new blisters appeared over uninjured areas of skin not before involved and then a diagnosis was made. The

Figure 1.

Figure 2.

lesions that were preceded by scratches first showed inflammation along the line of scratch, then turned white or gray and a blister formed filled with a clear or cloudy serum. Within a few days, the area of blister turned black and dried, forming a gangrenous scab or patch. The lesions not preceded by injury to skin surface came with a slight blush of the skin, followed within a few hours or almost at once, in fact, by a large blister and sometimes surrounded by smaller ones. These lesions have varied during the progress of the disease markedly, some of the blisters will be large and firm, filled almost to the bursting point with a clear serum; sometimes with serum that is cloudy; again, they may be made up entirely of pure blood, almost black in character. The majority of the blisters are of the multilocular type, that is, walled off by trabeculæ and if this blister

is punctured in one place only it will not empty itself, but it is necessary sometimes to remove the entire top of the blister before the serum will drain away. Another form has been of a flabby character, usually filled with a bloody serum and emptying itself when only a small puncture is made. This type contains much less serum than the other and is almost invariably followed by a large area of sloughing, this area being gangrenous in character. During the early stages of the disease, there was no evidence of involvement of the deeper layers of the skin, but during the last few months, the lower limbs have had large areas of gangrenous sloughing ulcers, which have usually gone through epidermis and corium, involving the subcutaneous layers. When this sloughing patch is removed with the scissors, there will invariably be particles of fat on the under surface of the piece removed. The duration of some of these lesions has been several months, but it eventually heals with practically no adhesion to the substructure. After healing has taken place, the scar is non-adherent and is sometimes pigmented. The scar area will be clear for weeks possibly, then with no

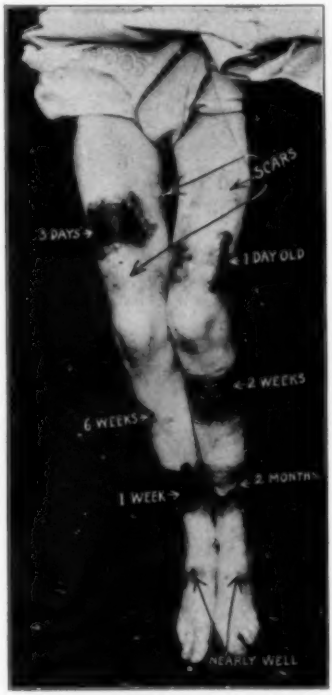

Figure 3.

apparent warning a new blister will appear over the same area, but the rule has been this new slough is not so deep and the resulting ulcer heals quicker than the original lesion. Some of the places over the body have broken down fourteen times and others have never recurred.

I am passing among you a series of photographs taken about six months after the beginning of the disease. I would like to call your attention to the symmetry of the distribution and also its bilateral character. Note the fact that no lesions have appeared upon the back from the seventh cervical vertebra to the gluteal region and hips. The backs of the legs or the flexor surfaces have always been free, excepting one small thin bulla over the back of the left calf. The chest has had a series of bullæ between the breasts, but none have appeared for several

months. The extensor surface of the arms, except the forearms, have always been free. Mucous membrane of the mouth, vulva and anal region, and palms of hands, soles of feet, fingers and hairy surfaces have never been affected. The face has had two small blisters, which were quickly healed.

Examination.—The general appearance of this patient, as you will note by the photograph, is anemic and somewhat emaciated. Her tongue is coated with a heavy white fur, which has a pinkish appearance. It is flabby and shows the teeth marks; lungs are negative; heart, weak and irregular; temperature normal with an occasional exacerbation to possibly 99.4; liver normal; stomach slightly dilated; tenderness marked over McBurney's point. Tenderness, also, over both ovarian regions. Vaginal examination shows left ovary to be the size of a hen's egg. Urine, normal early in the disease, now shows trace of albumen. The bullæ, as a rule, seem to project abruptly above the normal skin without any areola. Occasionally, however, they have a reddened base. The contents are usually clear

Figure 4.

serum. This may be variable and as previously stated may also be murky in appearance, stained slightly with blood or filled with black blood. The ones containing blood always have gangrenous patches. On account of making the dressings daily, the odor from this condition has never been bad. Microscopically, the serum shows staphylococci and the culture from the serum shows pure culture of staphylococci. In two instances the inguinal glands may have been markedly enlarged and tender when large areas adjacent were inflamed or ulcerating. She has complained of chilliness, nausea and vomiting, sleeplessness, occasional anorexia. At other times has exhibited a voracious appetite, overloading the stomach, with subsequent gastric and appendiceal colic and vomiting with resulting sleeplessness.

Nervous Phenomena.—Almost always during the office dressing the hands and limbs are constantly moving, necessitating an assistant while applying the dressings. After each dressing, and before the clothing has been entirely replaced, she falls over in a hysterical faint or sleep, which lasts from five minutes to two and

one-half hours. The head falls back, the mouth is open and fixed, breathing is stertorous. The right hand begins to rub over the appendiceal region, the left hand lying in the lap or hanging at the side perfectly quiescent. To control the movement of the right hand, considerable strength has to be exerted. When the left hand is placed over the appendiceal region it will not move. Strong ammonia as an inhalation and cold cloths over the eyes and face, and recently pressure over the ovarian regions is necessary to awaken her. She always awakens smiling and is immediately ready to get up and walk away.

Treatment.—Arsenic has been used in the form of liquor potassii arsenatis, also arsenious acid with iron, Blaud's mass and hypophosphites; pepsin and trional and bromidia for sleeplessness; morphin for pain. Unfortunately, the hypodermic syringe was used in its administration during one of her hard gastric crises and it has since been necessary to use the syringe frequently. However, the recent injections have been of plain water only and it has seemed to have as much effect as the morphin. It has been necessary for me to make as many as four visits to the home and have her come to the office once during the twenty-four hours.

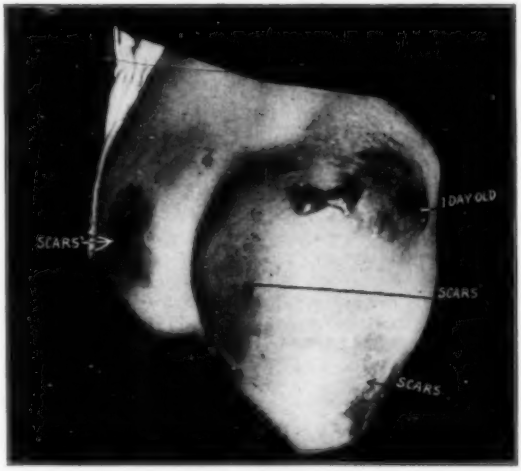

Figure 5.

Local Treatment.—I have cleansed these wounds with antiseptic solutions daily and for a protective have used an ointment containing balsam of peru, calomel, carbolic acid and lanolin with an unguentine base. The new blisters and scars have been painted with Churchill's tincture of iodin. Powders, wet dressings and ointments of different prescriptions were used, but thus far, the above seems to have given the best results.

Summary.—It has been suggested that this is a case of "factitious dermatitis" or "self-injury," and in favor of this theory the following arguments are expressed: The patient will not go to a hospital; will not have a nurse, and, therefore, is not under constant supervision; the lesions appear on the body only where her hands can easily reach; the apparent enjoyment she obtains from having the dressings changed; the fact that this patient is able to be up and around and come to the office for dressings, in spite of the large areas of ulceration. It has been suggested that carbolic acid, lye or other medicine might have been used. I, however, cannot reconcile myself to this theory. The surface of the bullæ shows

no escharotic effect, even under the glass. Many of the bullæ are multilocular. Many of them are hemorrhagic in nature and repeat themselves over the scar tissues or appear on the normal skin with equal facility. They have also twice appeared under bandaged areas; they are, as a rule, irregular in outline, and I know of no medicine or substance which could be used to produce such lesions. I therefore present for your discussion what I believe to be a case of "pemphigus gangrenosus," which has shown lesions of several varieties.

LATER.—Since reading this paper in May, 1909, the patient has not had a hypodermic injection of morphin, but has had numerous hypodermic injections of sterile water, which has quieted her within half an hour. At this date, Nov. 26, 1909, she has nine fully-developed lesions, all of them having appeared under the bandages and as hemorrhagic bullæ. The general condition of the patient is about the same, there is not much additional loss in weight nor strength since writing the paper.

REPORT OF A CASE OF HODGKIN'S DISEASE, WITH PRIMARY TUMOR IN GALL BLADDER.*

E. H. WELD, M.D., AND P. L. MARKLEY, M.D.

ROCKFORD, ILL.

Miss J., aged 29 years, American; occupation housekeeper. Family history was negative, except for the fact that one brother, aged 12, had been paralyzed since he was 1 year old. Patient had ordinary children's diseases, with good recoveries. Menstrual period began at the age of 14 and has always been normal. At the age of 15 she was thrown from a buggy and struck on the right side, just below the ribs, and has had some pain in that side since that time. For the last six years patient has been having sudden attacks of pain in the right side in the region of the gall-bladder, which would last from one to two days. This region was very tender. Stools were normal; slight jaundice; temperature slightly elevated at time.

Physical Examination.—Moderate build, height 5 feet 5 inches, weight 108 pounds; skin over the whole of the body has a peculiar sallow, slightly icteroid color. It is moderately elastic and moist. Paniculus is moderate, musculature poorly developed, hair and eyes are black. The sclera are blue-white. There are no enlarged glands in any part of the body. Chest is long, thin, but fairly well developed. Lungs and heart are negative. The liver is not enlarged above, but on the lower side, in the region of the gall-bladder, a mass can be seen and felt having the appearance of a distended gall-bladder. The rest of the abdomen is negative. Patient's digestive system is good, never constipated. Nervous system is negative. Urine is negative. Blood: reds, 4,200,000; whites, 10,400; hemoglobin, 71 per cent. Differential count: Small lymphocytes, 19; large lymphocytes, 28 per cent.; transitionals, 6 per cent.; polynuclears, 42 per cent.; eosinophiles, 3 per cent. Few poikilocytes.

This patient was operated on by Dr. Markley on Feb. 4, 1908. The gall-bladder was explored through the incision recommended by Mayo Robson. The large tumor in the region of the gall-bladder proved to be an infected, thickened gall-bladder, containing pus and gall-stones, and presented the appearance of a tumor which invaded the liver. The liver was found to be very much elongated and intimately connected with the gall-bladder and the whole mass adherent to the parietal peritoneum in front. These adhesions were so dense that to separate them would have

* Read at the Fifty-ninth Annual Session of the Illinois State Medical Society, Quincy, Ill., May 18, 1909.

lacerated the liver tissue so a piece of peritoneum was cut out and left adhering to the liver. The tumor, consisting of gall-bladder and a piece of liver, was removed in one mass by first suturing the liver with cross mattrass sutures of heavy catgut. The hemorrhage gave very little trouble, only one or two additional mattrass sutures having to be introduced after the tumor was cut off. The gall-ducts were drained, and the patient made an uneventful recovery. She is now, fourteen months after the operation, free from pain in the right side and slightly stronger than she has been for the past six years. Her weight has increased 4 pounds, she has no enlarged glands, but her hemoglobin has decreased from 71 to 50 per cent., and she still retains the peculiar sallow-colored skin.

The tumor, consisting of gall-bladder and a small piece of the liver, is about as large as a man's fist and, macroscopically, seemed to be of dense fibrous tissue. Histologically, the tumor conforms in every particular to the Reed-Longcope variety of Hodgkin's disease. The section which was taken from the wall of the gall-bladder is the older process, and shows marked connective tissue reaction. The piece of liver is fairly normal, as far as the liver cells and lobules are concerned. There is a slight decrease of cloudy swelling and very slight fatty degeneration. The capsule of the liver is greatly thickened and edematous, giving evidence of a chronic peri-hepatitis. The central veins of the lobules all show hyaline thickening of the connective tissue, but no active process. The essential change in the liver is in the Glisson's islands, all of which show the characteristic small-celled infiltration and histologic picture typical of the neoplastic process. These nodules invade the whole island, surrounding the bile capillaries and blood-vessels. They are in all stages; some miliary in character, which are accompanied by no reaction of the connective tissue of the island nor proliferation of the bile capillaries, and the other older ones, larger in area, which have called forth an increase of the connective tissue and a biliary proliferation. The essential structure of the tumor is as follows: There has been an atypical proliferation of the endothelium, forming a ground network of large, pale, bladder-like epithelioid cells. In the interspaces of this network are found mononuclear lymphocytes, very numerous eosinophile cells, both mononuclear and multinuclear and plasma cells. In some places the epithelioid cells are multinuclear and form large giant-cells. Scattered rather sparsely throughout the tumor are plasma cells. The section of the gall-bladder wall is identical, as far as the essential structure of the tumor goes, with that from the liver. The gall-bladder section represents the older process. There is marked connective tissue reaction and the greater part of the mass consists of hyaline connective tissue, containing some smooth muscle, with the tumor infiltrated all through it. There are small areas in this section, where the tumor cells are much thicker than others. The eosinophilia in this section is very uneven in distribution, there being areas here and there where the eosinophiles are very thick and in others these cells are very scarce.

The tumor is evidently the result of an inflammatory process produced by an infected gall-bladder and gall-stones. It is one of those

border-line tumors between lymphatic sarcoma and pseudoleukemia or Hodgkin's disease. Hodgkin's disease usually starts in a lymphatic tissue in other parts of the body, and only later involves the liver. Dr. Hall, of Kansas City, states that he knows of one case where Hodgkin's disease was primary at the pylorus of the stomach. It is of especial interest that there are no enlarged glands, and yet the tumor presents the exact histologic picture of Hodgkin's disease. Clinically, the case would never have been diagnosed as Hodgkin's disease, but more probably as a sarcoma, which confirms the belief of William Cooley, of New York, that sarcoma (small round-celled) and Hodgkin's disease are very closely related.

SKIN GRAFTING.*

G. H. Galbraith, M.D.

CLIFFORD, ILL.

The subject is one with which many of us have to deal during our professional career. The physicians in rural districts and small villages, as well as those in cities, are confronted alike with this problem. The patient is usually one that has been caught in some machinery and partially skinned, or he may have been burned. Carbuncles and other large ulcers will cause a portion of the cases. As the granulation tissue forms, the new skin border extends to cover the denuded area. It is observed that the new skin border finally shades to a thin non-resistant covering over the granulating surface. This non-resistant covering may always remain thin, to ultimately break down repeatedly and cause trouble, particularly so if the area is exposed to injury or pressure. If by cicatrization the wound edges are approximated, the cicatrix being non-resistant is subject to injury from pressure. In extensive denudations the cicatrization may be indefinitely delayed, thereby prolonging recovery and producing contractions and deformities. To prevent these faulty repairs we resort to skin grafting or some other plastic method to cover the defect and secure future usefulness of the part.

There are several methods of skin grafting with which we are acquainted, and no one method will be sufficient in all cases. We must select the best method applicable to each individual case. When large areas are to be covered we can adopt the Thiersch method with quite a good result, except in parts of the body subjected to pressure, such as the palm of the hand or sole of the foot. Where the area to be covered is small and the surrounding skin is lax, some plastic method can be used, such as the sliding or one pedicle flap. The skin may be dissected from the subcutaneous fat, then drawn over the wound and sutured. When there exists too much tension parallel incision may be made just beyond the free dissection. This will allow considerable laxation and will usually be sufficient to prevent any stitch lesions. The incision lines will usually heal readily if done aseptically. When the wound is of such size and shape

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as to make the described method impracticable, the skin may be dissected away in such shape as to cover the area, but leaving some portion of skin detached. This may be known as one pedicle flap method. It is a good one where practicable. Krause and others have been successful in removal of the entire thickness of skin to some distant part of the body. This method may have to be adopted, but usually an arm can be fixed sufficiently firm to use the attached flap method. In doing any skin graft, transplantation or plastic replacement of skin, the granulating surface must be clean, non-suppurating and sponged dry. It is better to curette away the excessive granulation tissue and dissect free the cicatricial border.

In doing the Thiersch graft several methods of lifting and placing the graft are in use. Some operators turn grafts with the epidermic side to oiled silk or rubber tissue, and then apply all at once to the denuded area. Some float the grafts in normal salt solution (warm), then place them. Some operators remove the graft and immediately place it on the clean sponged surface, being careful to prevent curling of the edges. Use razor dry, skin dry and sponged granulating surface and no fluids. After placing the grafts the grafted surface is covered with rubber tissue wet in sterile warm solution and arranged like lattice work. No chemical antiseptics are used during the operation. The following described method was used in one case, that of a destroyed palm:

Mr. C. E., aged 16 years, baker's apprentice. While cleaning a dough machine with a metal scraper, the right hand was caught and drawn through between the rollers. The scraper caught against palm and prevented entire arm from passing through, but literally tore the entire palmar surface away and portion of back of hand. The rent begun at the distal border of palm and across from little finger to index finger, thence along outer border back and up across carpo-metacarpal joint of thumb, thence along palmar border across wrist and all the covering of back was hanging loose by only a pedicle. In the palm, the skin and palmar fascia were torn away leaving the tendons exposed. The palmar surface of the fingers was rent as far as the middle joint. Under chloroform anesthesia the wound was sutured and dressed. In a few days gangrene developed in the palmar portion of the wound and sloughing began. The entire palmar covering was removed but the dorsal surface repaired nicely. The blood supply to the palm comes from beneath, and the cutaneous supply being insufficient, death of the part was the result. The hand was given a continuous warm water bath until the denuded surface granulated and cleaned nicely. The ring finger became gangrenous and was removed at the second joint.

The future usefulness of the hand was considered and it was decided that, if left to cicatrize the contractions would leave a useless claw hand, besides a delay in recovery, that, to do a Thiersch graft there would be insufficient resistance of skin to do manual work, but a whole skin graft would fill the requirements. The skin over the gluteal region, being thick and accessible, was selected. Under chloroform anesthesia the granulations were curetted and irrigated with saline solution and then over the gluteus maximus, on the same side as hand, two parallel, horizontal incisions were made about five inches apart and four inches long. The skin and subcutaneous fat and fascia were raised, then an opening for the thumb to pass closely was made. The hand was then put through beneath the raised skin with palm out and thumb projecting through opening for it. The free margins of flap were sutured to the distal and proximal borders of the palm. A piece of oiled silk was placed between the dorsal surface of the hand and the denuded surface of the hip. The entire field was dressed with plain sterile gauze, then hand and hip encased in plaster of Paris.

After twelve days the plaster and dressings were removed and the two pedicles were cut; the free edges were then sutured to sides of the palm wound. The entire hand was now dressed in plain sterile gauze and changed every two days. The graft did nicely and but little contraction of fingers resulted. The graft has been quite sufficient for palmar purposes. He has very good movement of fingers. The palm is somewhat full as though it was padded. The fulness is due to the subcutaneous fat removed with skin, but I believe it is really an advantage to have used it, thereby lessening tendon contractions and adhesions. The denuded surface on hip was partially covered by raising the borders and drawing together by using steel pins on each side, then winding silkworm gut in a figure-of-eight manner across the wound thus permitting a change of dressing beneath tension threads.

SUMMARY.

When a large surface of skin is destroyed, skin grafting should be done to hasten repair, prevent deformity and secure the future usefulness of the part. Since the Thiersch grafting can be done without an anesthetic, it should more frequently be done than it is in the outside towns. By resorting to the use of this method of repairs the surgeon not only benefits his patient, but gathers to himself greater confidence of his clientele. When it is evident that the Thiersch graft will not suffice, some other method should be adopted. Each case must be considered separately. The object of this paper is not to present a new subject, but to call attention to a much-neglected field for work, especially so by the practitioner out of reach of the hospital.

PREPARED FOODS AND DIABETIC ARTICLES.

R. T. Woodyatt, B.S., M.D.

CHICAGO.

It is impossible in a short paper to present anything approaching a full consideration of this topic. Only certain general principles may be mentioned, which, well established though they are, demand from time to time restatement and illustration.

Justification for the existence of artificially prepared foods lies in the fact that under certain conditions in life there arise hindrances of one sort or another, which interfere with the succession of events that mark the passage of fats, proteins or corbohydrates, as the case may be, from their source in the common food stuffs to the body-cells which represent the ultimate consumers. Such hindrances may block any step in the series. Thus, 1. Agencies outside the body may prevent food reaching the mouth as in the case of explorers in regions where common foods deteriorate rapidly. 2. Absence of suitable teeth, esophageal stricture, etc., may make solid articles useless. 3. Derangements of the mechanical functions of the stomach or intestine or abnormalities of their various secretions may prevent the resolution of good common foods into absorbable forms; and, finally, 4. Foods that have been successfuly eaten, digested and absorbed may ultimately fail to be utilized because of some metabolic disturbance like that seen in diabetes. Such difficulties can sometimes be circumvented by artificial preparations.

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* Read at the Fifty-ninth Annual Session of the Illinois State Medical Society, Quincy, May 18, 1909.

To judge whether or not a given prepared food is desirable we must know first the nature of the difficulty which makes common foods unsuitable for the case in question. We must know in how far the preparation in hand meets this difficulty. Besides these considerations we should always know the total fuel value of the preparation (how much energy it can liberate when eaten by a normal individual), its cost per calorie of heat as compared with the common foods and finally, since we cannot all analyze every specimen employed, the reputation for honesty enjoyed by the manufacturers of the article.

Extravagant, ignorant or wilfully misleading claims are sometimes made on the labels which tend to encourage the erroneous idea that foods can be concentrated to such an extent that they approach more nearly to the potency of dynamite than to bread and in this connection it may be recalled that, when burned in the body as food, *1 gram of protein yields about 4 calories of heat,* that *1 gram of sugar yields about the same* and *1 gram of fat about 9 calories.* Excepting alcohol and other substances of theoretical interest, there *are* no foods but fats, carbohydrates and proteins, so that the food value of any prepared article must depend upon its content of these substances. Albeit such preparations may present to the user protein, fat or carbohydrate in forms particularly suitable for use by certain weakened organisms, still their total food value for an invalid or anyone else can not exceed that of the aggregate of the proximate principles they contain. Pure dry protein such as dry egg-albumen or dry casein represents the limit of protein concentration. The limit for carbohydrate concentration is a dry sugar, for fats a pure oil. No food, so far as anyone knows, can yield per gram more heat than a gram of pure oil or fat.

There should be, therefore, no misunderstanding of the significance of a label like that which appeared on a certain[1] "Colden's Liebig's Extract of Beef and Tonic Invigorator," which read: "Its tonic and nutritive qualities are sufficient to sustain the body without the addition of solid food." Analysis of this preparation by Street showed the following composition: Water, 68.85 per cent.; alcohol, 16.53 per cent.; total solids, 16.35 per cent (much of it saccharine matter); total nitrogen .05 per cent. (corresponding at best to about .31 gram of protein).

Apart from its alcohol and sugar, then, this article has a food value per 100 grams equal to that of a half teaspoonful of milk and it costs 17 cents per 100 grams (90c. for 18 oz.).

For purposes of detailed discussion all prepared foods may be divided into three main groups:

1. Infant and invalid foods; which in general are designed to get sustenance into individuals in whom the various digestive juices are impaired or yet undeveloped.
2. Preparations made from meats.
3. Diabetic foods.

The first group comprises most of the milk preparations and those foods which consist in the main of sugars, dextrines and starch. Examples: Mellin's Food, Nestlé's Food, Malted Milk, etc.

1. The Chas. H. Crittenden Co., New York.

The second group includes the following: 1. Meat extracts—solid; e. g., Liebig's Extract, Armour's Extract, Mosquera Beef Jelly, etc. Meat extracts—fluid; e. g., Asparox, Vigoral, Bovox, etc. 2. Meat juices, Bovinine, Wyeth's Beef Juice, etc. 3. Meat powders, Somatose, Beef peptonoids. 4. Mixed proprietary preparations; e. g., Peptomangan-Gude, Panopepton (Fairchild).

In a recent report of the Connecticut Agricultural Experiment Station(thirteenth report on food products for 1908), by Jno. P. Street, there appears an analysis of eighty-six brands of prepared foods for sale on the American market. This report includes official definitions of such terms as "meat extract," "meat juice," etc., and enters in detail into the merits and demerits of the individual market preparations. Anyone desiring accurate information on this subject will find this report extremely valuable. The charts used in connection with this paper were in large part compiled from Street's report, a few figures having been taken from other sources. In addition to his figures another column was added in which the food value of 100 grams of each article was reckoned in calories so that their worth as fuel might readily be compared with that of bread, eggs and milk. In another column was placed the cost of each preparation per 100 calories of energy (i. e., the cost of the weight of the article necessary to yield 100 cal. when taken as food), these figures being derived from the cost of the package, the weight of material contained and the caloric value of the material reckoned from the analysis.

Comparison of the figures leads to the conclusion that the meat extracts, meat juices and proprietary groups contain insignificant amounts of food principles and that attempts to sustain life for any protracted period through their use must surely lead to starvation over an expensive route. The uses of articles of these types are in the main comparable to those of such things as tea, pepper and medicines. They are in no sense foods.

The articles comprising the first group on the other hand are in reality foods. Their prices are higher than common articles of diet but not usually exorbitant. They possess in the main characteristics which make them valuable in certain properly selected cases. A common failing in the infant food preparation is a content of unchanged starch under labels which describe the preparation as suitable for infants of any age. On labels and direction sheets there is a tendency to uphold the idea that these foods used exclusively will supply all the requirements of a developing infant, whereas their uniform lack of the so-called antiscorbutic elements found in fresh foods is but one conclusive argument against its correctness. But when one knows what the analyses of these foods show and what the specific requirements of a given case are, there is no good reason, if the price be reasonable, why they should not be employed and to good advantage. Even in infant feeding a prepared food of known composition, the use of which is properly supplemented by fresh elements, may be found valuable for selected cases.

DIABETIC FOODS.

What we can expect of diabetic foods depends upon our conception of what diabetes is. Diabetes mellitus is a disease in which the body has in part lost its ability to utilize sugars. Sugar arrives at the point where it should burn, but fails to do so, and accumulating in the blood creates an hyperglycemia. Disregarding accessory factors, which may play a part, we can say that ultimately the failure of sugar combustion in diabetes mellitus depends upon lack of "a something derived from the pancreas." The pancreas, like other glands, is capable of being stimulated into a state of fatigue. It may be conceived that excess of sugar in the blood of healthy individuals acts directly or indirectly (e. g., through nerves) as a stimulus to the pancreas, as a result of which more internal secretion is set free and the excess of sugar thereby automatically taken care of. Thus removed, the stimulating influence ceases and the pancreas rests. In diabetes it may be assumed that the pancreas is functionally weak. A small excess of sugar in the blood, let us say, calls for a response from the pancreas and as in health the excess may be removed. Sooner or later, perhaps as a result of some dietary excess, or of some shock to the nervous system which results in an outgush of sugar from the glycogen depots of the liver, an unusual hyperglycemia occurs. This calls for a strong pancreatic response, more than the functionally weak gland can give, and some excess of sugar remains unutilized in the blood. If hyperglycemia persists for any appreciable time the continuous pancreatic stimulation thereby engendered results in glandular fatigue. Less and less secretion is elaborated, less and less sugar utilized, the hyperglycemia grows progressively worse and a vicious circle becomes established. The condition of the pancreas then corresponds to that of a heart with broken compensation and as the treatment for such a cardiac condition is rest, so in diabetes rest is needed for the pancreas. To secure this we must control the stimulating hyperglycemia, which means primarily the withdrawal of carbohydrates from the diet, secondarily reduction in the amount of protein, until absence of glycosuria tells us that the blood sugar percentage is approximately normal. After prolonged rest of this sort a return of the pancreatic function to its previous state is frequently spoken of as an increased body "tolerance for sugar."

Such restoration of sugar-burning capacity, such increase in "tolerance," is the first aim of diabetic therapy. There are cases in which the ability of the body to utilize carbohydrate has sunk so low that as a result certain secondary changes in the fat metabolism have supervened. These changes are mainly responsible for the condition spoken of as acidosis. In health and in diabetes withdrawal of carbohydrate from the diet frequently causes the appearance of a previously absent acidosis or an increase in the severity of an already existing one. These aggravations are temporary. Still in such cases as already have a dangerously large amount of the acetone bodies in the blood no increase at all is permissible. In these cases, and only in these cases, should one refrain from an attempt to improve tolerance. Just where to draw

the line is a matter for individual judgment. Where means are at hand for accurate quantitative measurements of the daily excretion of acetone bodies one may be justified in closely approaching the danger point. When these means are not available a more respectful margin of safety must be maintained.

A good general plan for the treatment of ordinary mild and moderately severe cases is: 1. To make the urine sugar free; 2, to keep it so for two weeks even if this entails a temporary under nutrition; 3, gradually to add to the diet known amounts of carbohydrate until one finds in exact figures what the limit of tolerance is; 4, to place the patient on a permanent dietary in which the daily allowance of carbohydrate is about 60 per cent. of the maximum that might be borne without recurrence of the glycosuria.

During desugarization no special foods are needed and during the two weeks of rigid dieting no great complaints arise even when no bread at all is permitted. Bread craving, like thirst, is generally not seen in its aggravated form when glycosuria has been checked, or, what amounts to the same thing, when the cells are taking care of sugar enough to prevent excess in the blood. In the third stage of treatment, also, the object is to find out how much starch can be borne and to do this it is best to have the diet consist of a strictly non-carbohydrate basis to which one may add at will 50, 100, 150 or more grams of white bread on the composition of which we can rely. The number of c.c. of milk may be similarly determined. In the fourth stage the patient passes from close observation. Even if he does not crave carbohydrate he longs for something on which to spread butter and which "bites" like bread. The question then arises: Is there no bread which will satisfy this demand and still not contain starch?

Gluten is a protein like casein or egg albumin. It can be obtained fairly pure by washing the starch out of grain, the gluten obtained by this method being a gummy mass which, when dried and ground, gives a genuine gluten meal. Articles made of such a product with no additions of starch or sugar may be eaten by most diabetics in the same quantity as other proteins. The so-called "gluten flours" on the market are seldom of this kind, however. All but a very few of them contain some starch—some 10, some 20, some 40, some even so high as 75 and 80 per cent., the last figure being the content of starch in a good white flour. Furthermore, the "gluten flours" of nine out of ten of the concerns selling them vary in percentage from time to time, so that while yesterday a certain brand analyzed 20 per cent. today it may show 30 per cent. of starch. Now, suppose that by experiment in stage three of treatment we have found that a patient can tolerate no bread. Then, before we give him any "gluten flour," we must be sure that he gets one which contains virtually no starch. Suppose he can tolerate 100 grams of white bread. Then we may allow him 200 grams of a 40-per-cent. "gluten bread," or 300 grams of a bread containing only 20 per cent. of starch. While a patient may get more satisfaction eating six slices of a 40-per-cent. bread than by eating three of plain white bread,

so that there is some use for a 40-per-cent. article, it must not be forgotten that such articles are prone to vary in quality and are generally high-priced. Allowing a patient to buy and use gluten articles unrestrained without the physician's knowledge of where he gets them, how much starch they contain and how much of them he eats, amounts virtually to no treatment at all and a waste of money in addition. Misunderstanding of these simple facts is widespread.

For an article which contains less than 4 per cent. of starch at most, which serves as an acceptable vehicle on which to spread butter, cheese, meats and the like, which has considerable nutritive value and which, used in moderation, seldom disturbs digestion, *almond bread* has few superiors. It is made as follows: Blanch the almond nuts by soaking them in hot water and removing the skins. Soak the blanched nuts in two or three changes of hot water. Dry and then brown slightly in an oven. Grind to a meal in a coffee mill or meat chopper. Take a whole egg and stir into it enough almond meal to give the mass a consistency suitable for molding into cookies. Bake in a hot oven for about ten to fifteen minutes.

A genuine and reliable gluten flour can be obtained from Herrmann Barker, Somerville, Mass. He makes three grades, A, B and C, running approximately 2, 6 and 10 per cent. starch, the labels as a rule tallying well with the actual content. The price is high of necessity. Casoid flour of Steward, Callard & Watt, London, is a preparation analogous to a true gluten flour, except that milk protein is used instead of that from grain. Pure casein, such as can be bought from reliable chemical houses, can also be used if free from toxic matter. Dried agg albumin belongs in the same category, but is very expensive. The method of making these protein meals into cakes is much the same in all cases, and their value as foods is almost the same, although it is of some interest to remember that of the proteins so far studied casein gives in the body the most protein sugar.

A recipe for biscuit from a protein meal (e. g., gluten) is as follows: Beat up an egg with a little salt, add 1 ounce of water and beat until thick, then add a tablespoonful of cream. Stir into this enough protein flour (two heaping tablespoonfuls) to make a gruel of thin consistence and beat until it becomes thick. (Time required, twenty to thirty minutes.) Bake thirty-five minutes in hot oven, in well-buttered muffin pans. [Winton, "Diabetic Foods" (Conn. Agric. Exp. Station Report, 1906, No. 25), which see for analytical details of a large variety of market preparations.]

231 Dempster St., Evanston.

DISCUSSION.

Dr. James B. Herrick, Chicago:—Mr. President: A paper of this sort deserves a great deal of commendation, not only for the high character of the work, but because it shows us that the question of dietetics, which we have looked upon as extremely dry, as one best suited to the analytical chemist and laboratory man, can be brought home to us in a simple and scientific manner, and shown to be something with which we should be perfectly familiar. We are all of us, I think, inclined to be careless in paying attention to the proper diet, particularly

in the case of adults. While many illnesses do not need very careful and strict attention, general directions being sufficient, all of us make mistakes in not being explicit in telling patients what to eat and what not to eat; and we all err, if not in prescribing, at least in allowing to be prescribed or to be used many of these so-called prepared foods without knowing what is their nutrient value. It is well that we should have our attention called frequently to the fact, as has been done by Dr. Woodyatt, that many of these foods are not what they are claimed to be, and that when we think we are giving our patients nourishing food, we are perhaps giving them little better than nothing.

The more one sees of diabetes the more is one inclined to feel that there is a certain group of cases in which, in spite of the utmost care as to diet, fatal results will follow. There is another group in which the patient may be quite careless, the physician negligent as to diet, and yet the patient lives to a ripe old age and perhaps dies of some other disease. But there is a very large group in which the diet is of the utmost importance, and it is here that we should study our cases with particular care. We should be familiar with the content of the food we are giving. We have all heard it said repeatedly that most of the gluten flours on the market are frauds and delusions, and yet in practice I fear many of us are rather negligent and sometimes allow our patients to take these gluten flours, to their great harm. Patients feel, if they are taking gluten flour, they can take it in almost unlimited quantities; and sometimes, when a patient, who is passing sugar, comes to us and we inquire as to how much gluten flour he is taking, we are surprised to learn that he is taking it three times a day in the shape of bread, toast, pancakes and in every way possible, and if we look into the matter, we may find we are allowing the patient to eat large amounts of starch, and he is greatly surprised when we tell him we prefer to have him take a small amount of wheat bread and to give up the gluten flour entirely. In this way we may cause, at times, a disappearance of sugar from the urine.

As I said at the beginning, our attention can well be called at frequent intervals and by such papers as that of Dr. Woodyatt to the great importance of dietetics.

Dr. Arthur R. Elliott, Chicago: It is very hard to kill a therapeutic fallacy when once it has become established in the minds of the profession. That is demonstrated on all hands, but nowhere more emphatically than in the fallacy of diabetic foods, which persists in spite of the emphasis and the repetition with which the fraud of the so-called gluten breads has been shown by chemical analyses.

The mistakes made in the care of the diabetic by many physicians are two: They are the administration of specific medication and the employment of gluten flours. Seldom does the internist see a case of diabetes that has not been permitted gluten bread, and that without any specific restriction as to quantity. An objection to gluten bread does not consist so much in the fact that it contains carbohydrates, because every diabetic must receive a certain amount of carbohydrates. The error made in connection with the use of gluten bread is that its administration is not restricted, so that it is not known how much carbohydrate the patient is receiving. A much better end can be secured by employing honest bakers' bread, the carbohydrate content of which we know restricting the quantity within certain definite boundaries. Too great emphasis cannot be placed on (and this emphasis cannot be too frequently repeated) the fallacy of gluten flour.

Dr. Frank Billings, Chicago:—I want to repeat what Dr. Herrick has said, that this paper deserves commendation from us. It represents more work than a written paper, and I hope every member of the Society, who has an opportunity to see it in THE JOURNAL will study it. It means a great deal.

I am glad to have Dr. Woodyatt show us the absence of food value from many of the liquid beef extracts. I wish he had gone on and showed us something of the want of value of the ordinary beef and chicken and veal and other broths so commonly used in the sick-room. More than twenty years ago Fothergill died, and the older members of the profession will remember reading his many little pamphlets on practical subjects, and he called attention to this very point before

chemistry had advanced to its present status. He said in one of his pamphlets that the ordinary beef extract, so commonly used in the sick-room, was nothing more than concentrated urine, which is a fact. It has no nutritive food value. The fact of the matter is, that these extracts have less food value than some urine. Diabetic urine would be far better food than any of these extracts. Not only that, but these things are frequently poisonous. How many times do we find in the sick-room these beef extracts used in conditions in which the individual's excretory organs are not throwing out his own waste, and we are increasing the purin bodies in that individual's body by the use of such things. Nevertheless, they are advertised everywhere; they are used everywhere.

I remember very well, some fifteen or more years ago, when Armour & Co. first started their beef extract, I had several hot discussions with Mr. Armour, the elder, relative to the value of beef extract, and finally the old gentleman was so interested in the subject that he got the beef extract made by his company analyzed by chemists, and the food value of it estimated by them. He told me one day that he had found the statement I made in regard to Leibig's and other extracts having no food value was correct, and that his might come in the same category; but, he said, it is mighty good as a stimulant, and I am going to continue to sell it on that basis.

I only wish to corroborate what has been said, and not take up your time by discussing points with which I agree.

Dr. Frank S. Churchill, Chicago:—A discussion on food and food values is sure to appeal to the pediatrician. Although analyses of babies' foods have been repeatedly made during the last twenty years by reliable chemists, still it is just as well to have them repeated, and repeated constantly, if for nothing else than to show the absolute unreliability of these foods from time to time. When Dr. Woodyatt publishes his paper, I wish he would publish along with it the analyses made by the chemists of the companies.

As far as feeding babies is concerned, we have tried to be accurate in that matter, and all these things that have been described as having no food value have been thrown out of the window. We never use them. We rely on taking milk, the ingredients of which we know, and with that milk prepare a food for the individual baby adapted to the digestive powers of that baby, so far as fat digestive capacity, sugar digestive capacity and proteid digestive capacity are concerned. By taking various amounts of cream, fat-free milk and sugar, we can prepare a food for the individual baby which shall possess any amount of fat, sugar and proteid we desire, and which we think the individual baby can take care of. We no longer depend upon any of these so-called baby foods, and the sooner all of them are done away with, the greater will be our success in the feeding of infants.

While it may not be pertinent to suggest business here before the Section, I would like to suggest to the House of Delegates that they bar from the exhibits, which, I believe, are on the floor below, all such things as those that have been mentioned and condemned.

Dr. Charles Spencer Williamson, Chicago:—There is one point I should like to see emphasized more than it has been, and that is with regard to the various extractives. It is a familiar fact that these extractives have slight nutritive value. In fact, for the purposes for which they are given they are not only worthless, but less than worthless, in that they are exceedingly toxic. Experiments made several years ago demonstrated conclusively that groups of young animals would live a considerably longer period of time when given water to drink than they would by being fed on the majority of these extractives. When we realize that the profession as a whole is using them liberally in fevers and acute diseases, quite irrespective of their nutritive value and of their influence upon the cardiovascular system, I think we ought to emphasize this feature in our discussions, that not only have they no food value worth speaking of, but they are injurious in the quantities administered, by reason of the deleterious effects they have upon the cardiovascular system. This should not be lost sight of, especially in connection with the acute infections.

Dr. Woodyatt (closing the discussion):—With regard to publishing the analyses made by chemists (together with the claims) of the manufacturing companies, etc., which was referred to by Dr. Churchill, I will say that this has been done in the article by Street, contained in Bulletin No. 13 of the Connecticut State Agricultural Experiment Station, New Haven. The bulletin can be used as a reference for these things.

In regard to the point that some carbohydrate can be tolerated by a certain number of diabetic persons without a recurrence of glycosuria, as Dr. Elliott properly suggests, I would simply emphasize the fact that we lay too little stress on the necessity of rendering and keeping the urine of such cases constantly sugar-free.

The continued presence of hyperglycemia and, as evidence thereof, glycosuria is to be considered as injurious because of its constant tiring stimulation of the pancreas, and the resultant tendency to reduce the carbohydrate tolerance of the body. No uncertain method should be employed to keep the allowance of carbohydrate food well within the limits of safety.

ULCER OF THE STOMACH, WITH SPECIAL REFERENCE TO ITS DIFFERENTIATION FROM CANCER, WITH SOME REMARKS ON TREATMENT OF THESE CONDITIONS.*

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The condition of ulcer is of rather frequent occurrence, the percentage ranging as high as 10 per cent. and as low as 5 per cent. in series of cases demonstrated at autopsy. The disease is much more common in some countries than others, or in some parts of the same country than others, possibly more frequent in females than in males, and the largest number occurring between 20 and 30 years of age; old age is not exempt (though not so often), nor is it so rare in children; cases in the fetus have been reported. Heredity does not play much part, although so credited by some authors. Anemia is an etiologic factor, as evidenced by its occurrence in chlorotic girls and servant girls; its etiology is also evidenced in occupation, as shoemakers, tailors, etc., due to pressure on stomach. Trauma and anything that may produce anemia and atrophy of the mucous membrane are also causes. Circulatory disturbances as well as the anemias are etiologic factors. The disease occurs frequently in heart troubles, arteriosclerosis and liver troubles, as well as in tuberculosis and syphilis.

The *duodenal ulcer,* although the symptoms and etiology are similar in many respects, is more common in males. Ulcers, though usually single, are sometimes multiple, variously estimated from one to forty in individual cases. The usual situation of the ulcer is near the pylorus, but it may be situated anywhere within its walls. Usually it is found on posterior wall near the pylorus and lesser curvature.

Two forms of ulcer are found, the acute and the chronic. The acute ulcer is small, round, punched out, with no thickening of the peritoneum, forming a contrast, anatomically, with the larger, uneven, serrated,

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indurated, margined, chronic ulcer with its thickened peritoneum. The chronic ulcer may extend entirely over the lesser curvature, down onto the greater, or may be circular (rare), or girdle, forming hour-glass contractions of the stomach. These large chronic ulcers may continue for years without any attempt at healing.

These ulcers may perforate posteriorly into the lesser peritoneal cavity, or anteriorly into the greater peritoneal cavity; adhesion with any of the adjacent organs may be found, the spleen, the left lobe of the liver, omental tissues; anteriorly, usually a fatal peritonitis results. Abscesses, subphrenic, pyopneumothorax, may be the outcome of a posterior perforation; also there may be perforation into the pericardium, even into the left ventricle; also into the pleura; fistulous communication, gastroduodenal, gastrocolonic, gastrocutaneous, with general subcutaneous emphysema.

Hemorrhages may occur in both forms of ulcer: in the chronic form at the base of the ulceration. The splenic artery may be eroded, but much more often the hemorrhage is from the artery of the lesser curvature. Aneurisms at base of ulcer, embolisms and endarteritis are commonly found. These ulcers sometimes heal without leaving any special damage behind. Often stenosis of the pylorus and sometimes hour-glass contraction may result, as well as severe pain from adhesions, and chronic gastric catarrh, the result of the ulceration.

Origin of the ulcer of the stomach is very obscure. Virchow's view that it is due to thrombosis is in harmony with the anatomic facts observed, but will hardly account for all cases. Mere mechanical injury will not furnish sufficient cause in itself for the production of ulcer. Ewald concludes that there are certain predisposing causes, such as found in abnormal blood conditions; e. g., amenorrhea, chlorosis, anemia after confinement, in which condition there is a superacidity of the gastric juice, and also the alkalinity of the blood is lowered, which is in accordance with Cohnheim's theory. Sidney Martin advocates the theory of bacterial necrosis of the gastric mucosa, and suggests that the frequency of the ulcer at the pyloric region is associated with the absence of the acid secreting glands in this region.

It is not yet proved that hyperacidity of itself is a great factor in the production of ulcer. This probably has been proved: (1) That gastric ulcer occurs wherever gastric fluid flows; (2) the process in its earliest stages is essentially a necrosis; and (3) healing is prevented in some way by the action of the gastric juice. One cannot accept the theory that the hydrochloric acid is regularly increased in gastric ulcer; the statistics varying so must be due to varying ideas as to what constitutes hyperchlorhydria, what means are employed in testing, and by what reactions one should be guided. Ewald, in a series of 132 cases, found hyperchlorhydria in 34.1 per cent.; subacidity in 9 per cent., and normal acidity in 56.8 per cent. Lenhartz, out of 13 cases, found hyperacidity in only 3, and subacidity or anacidity in 5. Wirsung and Wagner found 42 per cent. of their cases with hyperacidity. Einhorn, in America, Robin, in France, and Fenwick, in England, found about 75 per cent. of their

cases had hyperacidity. Rutimeyer found hyperacidity relatively much more frequent in men.

The following may be justifiable from our present knowledge: 1. Gastric ulcers occur only where hydrochloric acid flows; hyperacidity is common in gastric ulcer, though in many cases there is no increase, and there may be a decrease, even anacidity. The amount of acid varies at different stages and periods of the malady. 2. Hyperacidity is common in the absence of gastric ulcer. 3. In itself it is insufficient to cause gastric ulcer. 4. Hyperacidity occurs commonly in chlorosis, and thus may be an indirect factor in its etiology. 5. Hyperacidity may induce gastric ulcer, when through any cause a portion of the mucous membrane is injured, and anemia and necrosis are produced. 6. Hyperacidity prevents the healing of gastric ulcer as Matthes demonstrated by irrigations with .56 per cent. solution of hydrochloric acid. 7. Secondary ulcers which form after gastroenterostomy are probably associated with excessive hydrochloric secretion. 8. Hypersecretion sometimes occurs with gastric ulcer, in which case the action of the hydrochloric acid is constant.

Much has been said about the neuropathic theory of gastric ulcer, but aside from the lowered power of resistance induced by an injured nervous system, and also the inducing of hyperacidity, there is but little relationship proved.

The general symptoms and diagnosis will now be considered. In order that we may comprehend the scope of ulcer, it is necessary that we designate the clinical forms, as well as to more or less fully outline its symptoms, and to differentiate it from all other diseases.

The clinical forms described by Welsh I shall adopt in the purposes of this paper. 1. Latent ulcer with entire absence of symptoms, as revealed at autopsy. 2. Acute perforating ulcers, with or without any previous gastric symptoms, perforation and speedy death. 3. Acute hemorrhagic form of gastric ulcer. 4. Gastrologic-dyspeptic form; the common form; gastralgia, dyspepsia and vomiting, the most frequent symptoms. 5. Chronic hemorrhagic form, with very marked hemorrhage. 6. Cachectic form, markedly resembling cancer. Usually represents or corresponds to the final stage of one of the preceding forms. Cachexia rapid. 7. Recurrent form. 8. Stenotic form, pyloric obstruction and dilatation of stomach.

Under such a variety of conditions it is not to be wondered at that sometimes mistakes in diagnosis are made. The condition may be met with accidentally, post-mortem; perforation may be the first thing noticed. In other cases a long-continued dyspeptic condition may finally be diagnosed ulcer upon the appearance of a sudden hemorrhage.

The most common symptoms by which ulcer is determined are: 1. Dyspepsia, which may be slight or virulent, most all cases having *nausea* and *vomiting*, but they may be entirely absent, the vomit usually being intensely acid. 2. Hemorrhage is present in from 25 to 50 per cent. of the cases, and it may be slight or profuse; the blood may be greatly changed or quite bright; the hemorrhage may be trivial in effect, or may be fatal in its results. The stools may contain blood. The source of the

blood is usually arterial, and comes on usually after meals, probably due to the action of digestion and the stretching of the walls of the stomach. When there is a severe hemorrhage the patient is pale, cold, clammy, dizzy, semi-conscious and more or less collapsed, followed by headache, fever, thirst, small, rapid pulse, with dyspnea or sighing respiration. In the acute ulcer we have the abrupt and sometimes fatal hemorrhages; in chronic ulcer the hemorrhages vary much. Moynihan divides them into four groups: 1. Latent; insignificant bleeding. 2. Those that are intermittent, infrequent, moderate. 3. Those which have become worse after the symptoms have developed; copious, repeated, perilous. 4. Sudden, overwhelming, fatal. Sometimes all the hemorrhage is from the bowel, but when we have a copious hemorrhage from the bowel it usually means duodenal ulcer or some other cause.

"Occult bleeding" was first recognized as a valuable symptom by Strauss and Boas in ulcer, and especially cancer of the stomach, followed by such men as Hartmann, Kochmann, Schloss, Freidenwald and Einhorn, who demonstrated that the examination of feces, vomitus or gastric contents for evidences of hematemesis and hemorrhages has considerable diagnostic value. Much blood may be present in the stools without being recognized macroscopically, owing to alterations and character of diet. The examination for "occult hemorrhage" must be preceded by the exclusion of all other sources of blood, such as bleeding from the gums and the nose, abrasion of mucous membrane of the esophagus by the passage of a tube, other diseases of the digestive organs and general systemic diseases, of which hemophilia, purpura, scurvy, arteriosclerosis and tabes are examples. Other diseases having "occult hemorrhage" are malignant diseases of the gastrointestinal tract, pancreas and liver, also hemorrhagic pancreatitis, which give often constant reactions; also stenosing gastritis, alcoholic gastritis, intestinal parasites, tuberculosis, syphilis, or simple catarrhal ulceration of the bowel, as well as hemorrhoids, fistula and fissures; ingestion of much raw meat, sausage, etc., might give the reaction. In suspected ulcer it is well to examine the stools after pain for the presence of blood.

The blood may be detected (1) by the microscope, for blood cells and pigment, which I like better than all other tests; beside this we have (2) the spectroscopic test; (3) the microchemical test, and (4) the chemical test, such as the guaiac resin, aloin and the benzidin tests, the description of which I have neither time, space nor inclination to go into. A negative result is so regarded after several examinations have been made, and its value lies in its diagnostic, prognostic and therapeutic aid. It is a sign of some lesion of the mucous membrane of the stomach, and its constancy would signify carcinoma, and its intermittent finding points to ulcer, when the tests are applied to the stomach contents. In ulcer cases the finding is most constant when pain and nausea are most marked. Also its diagnostic value is shown by the fact that repeated examinations in chronic gastritis, gastric atony, simple hyperchlorhydria, and nervous dyspepsia, gave negative results; while in ulcer about 40 per cent. gave positive results, and in carcinoma gave 96 per cent. from stomach con-

tents examinations, and 79 per cent. from feces examinations, in a series of cases given by Rutimeyer. As regards prognosis, it is of value, inasmuch as increasing intensity of reaction suggests an unhealed ulcer, and would signify that surgical aid is needed. With proper treatment the bleedings should diminish.

Pain perhaps is the most constant and distinctive feature of ulcer, and is variously described as burning, boring, cutting, gnawing, tearing, and probably lancinating, or cramping; sometimes a dull ache, at other times excruciating in character, and frequently radiates to the back, and is more particularly felt when the stomach is empty, and is relieved in some cases by taking food. The most characteristic form is a severe paroxysmal gastralgia, and radiates to the back and sides. Pain is present in about 90 per cent. of all cases. This pain occurs during the digestive period, either immediately after taking food, or at the height of digestion, and is increased by the hyperacidity. When the ulcer is at the pylorus the pain may not appear until about three or four hours after meals; the time of appearance thus gives a clue as to the site of the ulcer. Pain is found under the left costal edge, at first only slight and paroxysmal, later more constant and leads to emesis. Riegel lays great stress on this left-sided gastric pain, which is constant, or intermittently progressive, and regards it as a sure sign of ulcer. There is an absence of any other cause for this pain; it is not reflex, such pains are in the median line or are right sided; and are worse after meals, always in the same spot, and lead to emesis. Pain coming on three or four hours after meals is also symptomatic of duodenal ulcer.

The effect of food upon the pain is always very important in the diagnosis of ulcer. The pain is made much greater after the ingestion of much food, or of solid food, but there are many exceptions, as foods very often give relief, especially albuminous foods, if there be hyperacidity. Sometimes there is no relation between the taking of food and the time of pain. Rutimeyer found this to be the case in about 14 per cent. of a series of cases. Perhaps the ulcer is latent, and no pain exists, then the prognosis is more grave, but there are many healed, latent ulcers. Pressure usually does not relieve the gastralgia of ulcer, while, on the contrary, other gastralgias are so relieved; but this is not always the case. The pain may or may not be relieved by the change of posture; as a rule this is so, but one can easily draw false conclusions.

Tenderness is elicited usually just below the xyphoid cartilage and a little to the left, or the most tender spot may be two or three centimeters to the left of the spine between the tenth and twelfth dorsal vertebræ. It is important that the site of tenderness correspond to the site of the pain after eating, and the situation of this tenderness rarely varies during the whole course of the disease. Boas has devised an algesimeter which determines the degree of sensitiveness; an epigastric sensitiveness to four kgms. of pressure, or less, and a dorsal sensitiveness to five kgms. of pressure, would indicate ulcer.

The cause of the pain must certainly vary. Sometimes it can be ascribed to the ingestion of food, sometimes to gastric movements, or to

peritoneal involvements; scars with adhesions will cause pain. Moullin says (denied by Pawlow) that the gastric mucosa has no afferent sensory nerves; consequently the pain must be due to the inflammation of the lymphatics near the ulcer and extension to the parietal peritoneum. Lenander regards the pain due to adhesions, while Mackenzie holds that it is a referred pain, the tenderness depending upon muscular and cutaneous conditions and not upon organic changes of the stomach.

Vomiting perhaps is less constant than the pain, although Johns Hopkins shows the reverse. In Fenwick's cases 100 per cent. had pain, 72 cases out of 265 had vomiting, and 71 per cent. had hematemesis. The vomiting may appear only at intervals of a week or more. It has a very definite relation to pain, by which it is usually preceded, the vomiting having its chief cause in pain and not in nausea, which fact is of diagnostic importance. Vomiting, while it may occur soon after the taking of food, usually does not occur until the height of digestion, and the pain is relieved by the vomiting. The quality of the food also has something to do with the vomiting, more often occurring after the ingestion of solid food; coarse foods are sure to bring it on. The vomitus in acute ulcer does not show the signs of motor insufficiency, while in old ulcer, where we have gastric dilatation due to pyloric obstruction, we have the vomitus of motor insufficiency and gastrectasis, varying according to the food taken and the length of time it has been in the stomach. When there is hyperacidity, digestion is quick, and the albuminoids are well divided, although at other times it is not digested at all, and comes up sour enough to put the teeth on edge.

Not much is to be gained from physical examination in cases of acute ulcer of the stomach. Tenderness is a fairly reliable sign; a localized tender spot which can be felt through to the back on pressure (which pressure should be carefully made) and just below the xyphoid cartilage is a very significant symptom. Boas lays stress on tenderness near the twelfth vertebra on the left side; oftentimes the tenderness is diffuse. No tumor is palpable in fresh ulcer. In older ulcers the physical findings may be much more manifest, due to scarring, pyloric obstruction, etc. On inspection peristaltic movements of the dilated stomach may be seen, while palpation may reveal in the upper right quadrant a tumor of varying size, more or less movable, according to adhesions, situation and so forth. Reinhardt's cases showed about 16 per cent. with tumor, in all of which the autopsy revealed a small ulcer. Moynihan in 100 gastro-enterostomies with ulcer found ten with tumor, all of which were benign, the tumor mass being due to a thick ulcer, a muscular hypertrophy, or exudate with adhesions.

Gastric analysis varies according to the type of the ulcer. In the acute form the HCl may be normal in amount, the proteolytic digestion unimpaired, and motor power good. Other times there may be hyper- or hypoacidity with motor insufficiency; blood may also be present. With more chronic forms the site of the scarring ulcer will determine in a measure the findings. With pyloric stenosis there is usually hyperacidity and food retention, good digestion of albuminoids, with little or no

change in the starches. Sarcinæ and yeast cells are found in these cases. Lactic acid may be found in these cases if we have hypo- or anacidity. Rutimeyer found motor insufficiency in 42 per cent. of his cases of ulcer.

One of the difficult things with which we have to deal is the developing of cancer upon ulcer. Cruveilhier was the first one to suggest this in 1835, we believe, although he thought a cancerous diathesis essential to its development. Dittrich, in 1848, analyzed 166 cases of cancer of the stomach and found that eight of the cases had formed on an old cicatrix, and two where the very edge of the ulcer had been the starting point. In 1883 Hauser and Zenker established beyond a doubt the relationship existing between cancer and ulcer of the stomach, while Kollmar never saw a case in twenty years' experience at Tübingen. The idea has now become well fixed that ulcer is one of the commonest causes or starting points of carcinoma; and it was suggested recently by competent authority that in the cases studied at Mayo's clinic fully 61 per cent. of the cases of carcinoma had their origin in ulcer. That cancer and ulcer are frequently associated is evidenced by the fact that each selects the pylorus and lesser curvature for their development, and also that cancer so frequently springs from scarred tissue on the outside, and in the stomach the scars are rendered irritable by the presence of food and hyperacidity.

The transition period between the symptoms and signs of the original ulcer and the onset of the cancer varies. Sometimes so short that the diagnosis may be doubtful, at other times the first symptoms of ulcer may have been many months or years previous. Long periods of latency are common. We cannot always tell when the transition began, and our conclusions are based upon the course of the malady. When ulcer patients begin to lose flesh more rapidly, have a more constant pain, with a change in character, tenderness more diffused, more nausea and vomiting, at least more regular vomiting, the vomitus more copious and rancid, and readily excited by liquid food, blood more frequent in vomit, occult blood more frequent in the feces; patient more languid, weak, anemic; appetite gone; and to all this we add decrease in acidity of the stomach contents, together with a probable tumor, although hyperacidity may be present to the end, we may be pretty safe in diagnosing cancer.

Numerous conditions may be, and are, taken for gastric ulcer, and I need not summarize the symptoms here: the dyspepsia, the pain, the tenderness, the hematemesis, the usual hyperchlorhydria, etc., which make a diagnosis more or less certain, but mistakes are many. Among the things from which it must be differentiated are simple gastralgia, hyperesthesia, simple hyperacidity, hysteria, gastritis, hyperemesis, uremia, gall stones, renal calculi, aneurisms of the abdominal aorta, spinal disease, hemorrhagic erosions with exfoliations, arteriosclerosis, duodenal ulcer, carcinoma.

1. In gastralgia there is paroxysmal pain not directly excited by food nor related particularly to its ingestion. Pressure relieves the pain as a rule, while the opposite generally is true with ulcer. There are no tender spots. Vomiting does not necessarily give relief to pain; while in ulcer

the relief is usually instantaneous. Digestion is normal, and the trouble is not relieved by diet; usually there is gas eructated without odor. There are no dyspeptic symptoms between attacks, no hemorrhages, no occult blood, no impairment of nutrition, any or all of which may be present in ulcer. Yet we have sometimes a nervous dyspepsia with severe gastralgia and emaciation that is very difficult to diagnose from ulcer.

2. In simple hyperchlorhydria there is rarely vomiting or hematemesis, no occult hemorrhages, very little tenderness, and no dorsal tender point. The pain appears one to three hours after meals; it may be in the night, especially if there is hypersecretion. The cause is usually of nervous origin, and the proper diet with alkalies gives prompt relief. If the case does not yield, and the pain comes on soon after meals, with frequent relapses, the hyperchlorhydria may be due to ulcer underlying the condition. The laboratory findings in these cases are often misleading, yet they are not worthless. Much HCl points to ulcer, but you cannot be certain about it, unless you have some of the other cardinal symptoms of ulcer.

3. In simple hyperesthesia there is usually pain after meals with vomiting; the pain comes at once, regardless of the character of food or whether it be hot or cold. There may be tender spots, but they are not constant in their location; the vomiting varies as do the tender spots, and may give no relief as in ulcer. The nutrition is good, the HCl not much in excess, and the rest cure is of no avail; no occult blood.

4. In gastritis a cause may usually be found; pain less severe, more diffuse, and pressure does not affect it much. If blood be present it is seldom large in quantity.

5. Pregnancy with hyperemesis: The history of the case and the local findings are the best means of diagnosis; pain is always absent, no tender points, no bleeding.

6. The gastralgia which often accompanies uremia may be differentiated by other signs as well as by urinary findings.

7. Hemorrhagic oozings from the gastric mucosa due to minute erosions often perplex the general practitioner, as by our present means of diagnosis we have no way of differentiating. Nothing is usually found anatomically. And while it is said that it is more common in women; that pain comes on after food, as in ulcer, only more diffuse; that vomiting is more rare and often with hemorrhage; that the blood is bright red and may recur for years, and that there are but few tender points, although we lack many of the dyspeptic symptoms found in ulcer, yet it makes a diagnosis rather obscure.

8. Biliary colic: Gall-stone colic is often very difficult to differentiate from ulcer, especially if the ulcer lie in the duodenum, or at the pylorus. It is extremely difficult in those cases of gall-stone colic where there is no jaundice nor bile in the urine. There may be tender points, and relief may follow vomiting. However, as a rule, in biliary colic, there is sudden and extreme pain, which may disappear as suddenly as it came; tenderness in the right hypochondrium, slight fever, and sweating; usually there is nausea and vomiting without any relief to pain

until the stone passes or drops back into the gall bladder. After the attack is over, the general health seems good and digestion normal; but there is often superacidity and coexisting paroxysmal gastralgia. The sudden onset and character of the pain and previous history of the case will usually make diagnosis easy in the typical cases.

9. Arteriosclerosis: This is usually found in old people and sometimes it is accompanied by severe pain, generally of stomach and bowels, but does not localize. The digestion may be good and, in spite of any kind of treatment, the pain persists. The character of the gastric symptoms, the history of the case, and the marked arterial signs are usually suggestive of a proper diagnosis.

10. Duodenal ulcer, according to Mayo, occurs in proportion to gastric ulcer as two to three. Of the last two hundred cases reported by Mayo, 98 were duodenal, 87 gastric and 15 independent of either viscus. In diagnosing duodenal from gastric ulcer we have a more difficult task, as we have those cases that are indistinguishable from gastric ulcer in symptoms and course; then we have another class of duodenal cases with hemorrhage from stomach or bowel or both, and with no other symptoms; again a class of cases resembling biliary colic, with its pain and tenderness, and intermittent jaundice; and, lastly, the perforation cases, resembling perforation of the gall bladder and appendicitis. From gastric ulcer the first two cases or classes of cases are the ones furnishing difficulties in differential diagnosis. However, a few points may serve to help in diagnosis. There is pain in both, and it may be of the same character, yet in duodenal ulcer the location is usually to the right of the middle line and more often taken to be biliary colic than gastric ulcer; and does not occur until several hours after food. It is a very prominent symptom, and occurs in 80 per cent. of all cases. The pain may radiate, but not as a rule. Vomiting is less common than pain, occurring in about 18 to 20 per cent. of the cases. Tenderness is usually to right of median line and no tenderness to the back. Acidity usually increased. Hemorrhage in duodenal ulcer is both from the stomach and the bowel; more often from the bowel than that of gastric ulcer. The diagnosis is made more commonly from the association of the local tenderness and the melena, or even from the tarry stools in the absence of pain, than from any other signs. Sometimes hematemesis and melena occur together and may be profuse, even to a fatal termination. This is severe in at least one-third of the cases, and the secondary symptoms, the pallor, collapse, reactionary fever, etc., may precede the appearance of the blood for three or four days. Wrong diagnoses are frequently made, and most cases with perforation have been taken for appendicitis. Moynihan's mortality, five out of seven recovered, Mayo's cases, four out of six recovered, postoperative.

11. Carcinoma: In cancer, debility and emaciation often precede the other signs; the pain is more constant and does not bear such a constant relation to food, often independent of food, often nocturnal, but often may be quite absent, simply a feeling of distress. The breath is foul and there is anorexia as a rule; there is less relief from vomiting, which

resembles that of motor insufficiency, and shows but little HCl; but usually some lactic acid and other evidences of fermentation and the Boas-Oppler bacillus. The hematemesis that occurs is more of the character of coffee grounds vomitus, and occult bleeding is more continuous than in ulcer. More trouble in diagnosis exists when we have ulcer of the pylorus with tumor with symptoms of dilatation, or where a cancerous growth has been engrafted upon an ulcer. The view is now held that a great many cases so arise. Cancer, however, limited to the pylorus is rare, and when tumor exists other signs are prevalent. If it should be limited to the pylorus, the onset is obstruction with vomiting, cramps, emaciation in elderly people, and dietetic treatment affords no relief. If first seen when there is much dilatation the diagnosis must be made from the history and examination of the stomach contents; 90 per cent. of these cases show an absence of HCl and the presence of lactic acid, while in ulcer we have hyperacidity or a normal acidity. The history of ulcer causing dilatation is of long standing, because it is of gradual development; lavage improves the appetite, and the general condition improves.

With cancer engrafted upon ulcer there is increase of pain, the picture gradually changes, the tumor becomes nodular, more emaciation and weakness, and the HCl gradually becomes less, although it may persist to the end. In differentiating cancer, two main types must be considered, viz.: those without tumor and those with tumor. Where no tumor is evident, we have cases with little or no motor insufficiency, and those with definite gastrectasis. And we might add a third, cancer at cardiac orifice. When there is no motor insufficiency the cases are easier to diagnose. Here we can depend upon the lactic-acid test, which is rare in the other classes of gastric diseases accompanied by atony. Therefore early presence of lactic acid probably means cancer. Other diseases to be considered in this category are ulcer, neurosis, chronic gastritis, and atrophy of the mucous membrane. In ulcer and neuroses the HCl is usually normal as well as the pepsin, or they may be increased; no lactic acid in either of them. In chronic gastritis the history of the cause, the gradual onset and slow progress, with exacerbations, are characteristic; the secretions are disturbed later in the disease, the HCl is less commonly absent and is often only diminished. Motor insufficiency is later, too, progresses less rapidly, less gastrectasis, less stagnation of solids, occult bleedings less persistent, if they are present at all. In atrophy a protracted course, the motor power unimpaired for a long time, no lactic acid, but little emaciation; anemia, as in cancer. Pernicious anemia shows little emaciation, as a rule, although it may be extreme. HCl may be absent, and lactic acid present sometimes. Even the blood count may be hard to distinguish, but the cachexia and the anemia do not go *pari passu;* no hematemesis, and usually no occult bleedings.

Addison's disease resembles cancer in malaise, weakness, dyspeptic signs, etc., but the pigmentary changes are present, and the analysis of the stomach contents differs materially. Cancer of distant organs induces no motor insufficiency, and lactic acid is not present; however, HCl may be absent.

Second class of cases with gastrectasis and pyloric stenosis are more difficult to differentiate, because lactic acid is so often present in gastric diseases (other than cancer) with atony; and here the presence of lactic acid has but little significance. The main thing to be differentiated in this class of cases is scarred ulcer of the pylorus without palpable tumor. The history of previous ulcer, the longer duration of the malady, the presence of HCl, the finding of sarcinæ, the absence of lactic acid, the eructation of H_2S gas, absence of cachexia, all suggest a benign condition.

When tumors are present we have to determine whether they are gastric or extragastric, and whether they are benign or malignant. Tumors outside the stomach simulating gastric cancer are in the main perigastritis, cancer of the duodenum, omental or peritoneal tumors, peritoneal tuberculosis, tumors of the transverse colon, tumors of the gall bladder, cancer of the liver, abnormal conditions of the pancreas, besides other conditions in kidney, liver and spleen.

Gastric tumors arise from cancer or sarcoma, scarred pyloric ulcer, hypertrophic pyloric stenosis of infancy, spasm of pylorus, lipoma, fibroma, and foreign bodies. Cancer of the lesser curvature usually presents achylia from the beginning; less motor insufficiency until infiltration occurs; and is not usually palpable unless there is a ptosis or the tumor is large. The patient's weight is usually well maintained because the motor power is good until late in the disease. Estimation of the ferments aids regional diagnosis sometimes; the fundus yields pepsin and rennet, while the pylorus yields only pepsin. If pepsin is diminished and the rennet preserved it shows probable pyloric involvement; while if both pepsin and rennet are lessened it signifies involvement of the fundus.

Cancer of the cardiac end is very infrequent. Fagge, in his reports from Guy's Hospital, says that, in his opinion, almost all reported cases of cardiac cancer have had their origin in the lower end of the esophagus. When they do occur, however, they may remain latent for a long time; but we have cachexia, dysphagia, pain immediately after ingestion of food, with gradual obstruction, oppression, regurgitation; and tumor cannot usually be felt. The blood findings in these cases might be of some value; the blood count is rarely so low as in pernicious anemia; and in some cases of cancer the blood count may be high, even six millions or more. The lower color index, as in secondary anemia, the absence of megaloblasts, and leucocytosis speak for cancer. Some authors place considerable importance upon a differential leucocyte count. Possibly a leucocytosis during digestion is of value.

To summarize: It may usually be considered that epigastric pain related to food, vomiting and localized tenderness are symptoms pointing to ulcer; and if hematemesis be added the existence of ulcer is almost certain. The more acute the symptoms and the shorter the time between their onset and the seeking of advice are points in favor of ulcer; and especially if the symptoms do not subside after a few days in bed with care and diet.

Treatment: Leube says one-half to three-fourths of all cases of ulcer of the stomach will be cured by medical treatment in the course of four

or five weeks' time; cases not cured in that time will not be cured by medical treatment alone. The mortality of ulcer of the stomach is grave, all kinds of cases considered. Out of five hundred cases reported by Bulstrode, of the London Hospital, all the cases admitted, 98 were men and 402 were women, and the total mortality was approximately 18 per cent.

Recurrences are very frequent, in fact in at least two-fifths of the cases which are apparently cured; this not including those cases which have been admitted to the hospital from the complications and sequelæ of gastric ulcer; pyloric stenosis, hour-glass contractions, gastric dilatation, chronic vomiting, adhesions, etc., caused by long-healed ulcers; those cases in which carcinoma was engrafted upon old ulcer not being included. So the percentage of cases of recovery is not nearly so high as might be imagined. Patterson endeavored to follow up a series of cases discharged from the hospital as cured, and out of 72 cases traced 10 were free from symptoms of gastric ulcer after a period of three years. It has been estimated that less than 25 per cent. of the cases admitted to the hospitals have been real cures. Relapse is much less common in private practice. It is estimated that 50 per cent. of all cases in private practice eventually succumb to ulcer or some of its complications.

How does surgical treatment compare with this? Surgeons see the worst cases, and out of 300 cases of various kinds of ulcer and its sequelæ, which had failed to respond to medical treatment, Mayo Robson had a mortality of but 3 per cent.; but this same author states that in his private practice the immediate risk of posterior gastroenterostomy amounted to only 1.7 per cent., and the cases relieved completely of all symptoms were over 90 per cent., a proportion which will be made better as experience increases. Acute ulcer, as a rule, apart from its complications, does not demand surgical treatment; when ulcer relapses and becomes chronic, operation, in our mind, is urgently demanded.

The medical treatment consists in rest, a carefully regulated diet, and medicine. Rest should be absolute, referring to all acute cases. Rectal feeding is theoretically more correct, but in practice it is not always satisfactory. In those cases with acute hemorrhage, rectal feeding is absolutely demanded for a period of two or three weeks. The diet should be bland, easily digested, and given at regular intervals, all solids absolutely prohibited, milk, buttermilk, beef solution, egg-albumin, constitute the main bulk of the diet in all my acute cases; and, indeed, some other cases that refuse operation, as in subacute and chronic cases; here we may add scraped beef, or broiled beef in moderate quantities. Warm fomentations over the stomach are sometimes very grateful.

As regards medicines, not many are needed in these acute cases. Some form of salts, like Carlsbad, which most of our cases get; codein or other opiate, when absolutely demanded for pain; and antacids and sedatives for the pain and absorbent effects. Of these a favorite combination of ours, which meets the indications as well as any, is cerium oxalate, 0.5 gram, bismuth subnitrate, 1 gram, and magnesia carbonate, 2 grams, given in mixed powder immediately after, two or three hours,

or four hours, after food, depending upon the time of pain and the degree of acidity. The patient may be given, in pyloric cases, where there is gastrectasis and considerable vomiting, nux vomica or its alkaloid to stimulate motility. Lavage in these cases should be practiced. Silver nitrate is considered a very useful remedy.

We have various methods of treatment, such as the Leube method, the Lenhartz method, whose virtue lies in the continuous administration of concentrated albuminoids, of which eggs is the principal article of food, thereby using up the superfluous HCl. The patient should be told that the treatment should be continued over a period of from two to four months, and that he should be in bed the first half of this period. At the end of this period he should be promptly told, if he is not on the road to good recovery, that his best chances lie in surgery.

The operation preferred to-day is gastrojejunostomy, which I shall not attempt to describe, further than to say that the posterior incision is the preferable, and that the opening in the jejunum should be as near its junction with the duodenum as possible. Mayo's mortality in 307 cases was 6 per cent.; Moynihan's, 4.3 per cent., and in a series of cases by Robson, 3.3 per cent. And in another series of 110 cases operated on by Robson, 101 resulted in complete cure.

VACCINE TREATMENT OF IRITIS—WITH REPORT OF TWO CASES.

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Although during the present age we are hearing so much in regard to the treatment of certain diseases by vaccines, nevertheless many of us hesitate in regard to using them, not from the fear that they may do harm, but simply because there are so many remedies on the market, of one kind and another, that it is impossible to use them all. We simply use the drugs that we know should give us certain results.

Suddenly we find ourselves up against some obstinate case. Nothing seems to produce the desired results, and things go from bad to worse. Some time ago Dr. W. A. Mann of Chicago mentioned the fact that he considered his results with the vaccine treatment in certain cases very good.

On June 8 H. D. R., a barber by trade, came to the office for eye treatment. His trouble dated back five days, and, although under treatment by a physician, his condition had grown steadily worse. The eye had pained considerable ever since the trouble started; there had also been considerable lachrymation and photophobia.

The day he came to the office he was complaining of considerable pain, both in the right eye and also on that side of his head. Both the upper and lower lids were swollen, and there was deep corneal congestion. Pupil small and round. The tension of the eye was +1 and

the patient complained of a great deal of tenderness during the examination. I used scopolamin in the eye and kept him in the office for about three hours. The tension soon became less, but the pupil dilated very irregular indeed. A few drops of dionin, 2.5 per cent. solution, was also used. He was directed to return home, to use hot applications and remain in a dark room. A laxative was also prescribed.

June 9 pupil was still very irregular, and resisted all attempts to dilate it fully. Pain was severe at times. Same treatment was continued as previously given. June 10 at 3 a. m. he was taken with terrific pains in that eye and through the right side of the head. Hot applications were applied and a cantharides blister used over right temple. Morphin sulphate one-fourth of a grain was given hypodermatically.

Tension was +1 all that day, so ordered a solution of dionin, cocain and atropin, to be used every two hours during the day.

As there was no change in his condition that evening I gave him an injection of streptococcus vaccine 30,000,000, which is prepared by G. H. Sherman of Detroit, Mich. June 12 he rested very well during the night, excepting between 4 a. m. and 6 a. m., when he had considerable pain. I saw him about 5 p. m. Found the tension normal, eyelids much less inflamed and the pericorneal injection somewhat less. No pain on pressure this afternoon for the first time. Pupil still very irregular.

From this time on he gained very rapidly, and in a few days he was back at his work much against my wishes. A couple of days after his starting to work the eye became much worse, but I at once gave him another injection of the streptococcus vaccine. The iritis immediately quieted down and has caused no trouble since.

Case 2.—Mr. W. F. D., age 30 years, came to the office on June 2, saying that for five days he had been having considerable pain and lachrymation in his left eye. He had done nothing for it up to the present time. The case I diagnosed as one of simple iritis, and, as it had been troubling him for a few days before requesting treatment, I advised absolute quiet in a dark room, using scopolamin, dionin and hot compresses, besides advising him to pay strict attention to his elimination.

The symptoms of iritis were all present here, so I will not enumerate them. Up to July 11 there had been some improvement. Pain at night had almost disappeared.

On June 12 I gave him an injection of streptococcus vaccine 30,,000,-000. The next afternoon quite a change for the better could be seen. The pericorneal injection was less intense, and he could now open his eye just a little for the first time in a number of days. The case from this time on recovered rapidly. Nothing new developed and only one injection of vaccine was used.

These two cases are simply examples of the good results which we have frequently derived when using the vaccine treatment. The results have been especially good in acute streptococcus and staphylococcus infections of the ear, nose and throat. My results have been negative in chronic suppurative conditions of the sinuses. Whether the cause of

my failure to get any results is due to not having carried the treatment long enough or is due to the pathological conditions present, I can not say.

I do not want to give the impression that I am over-enthusiastic in regard to the treatment in these cases by vaccines, especially when the number of our cases has been only about fifteen, but I do consider this treatment very valuable indeed, whether in diseases of the eye, ear, nose and throat, or even in diseases of any part of the body. As the cost is very small, and as the vaccine keeps for months without deteriorating, they should be kept in the office of every physician, especially the country practitioner. The vaccines can be given with an ordinary hypodermic syringe, care being taken that both the needle and syringe are sterilized before using.

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THE EYE IN RELATION TO GENERAL DISEASES.*

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In America, the curriculum in many of the medical schools is giving short shrift to the examination of the normal eye and to the study of diseases of this organ.

Laboratory studies, of more or less practical value, have crowded a study of the eye into the background. The result has been that the average general practitioner knows but little of the external diseases of the eye, and less of the intraocular, and therefore is unable to interpret their meaning in relation to diseases of the general organism.

Such a state of affairs, in my judgment, can not long exist; and, indeed, the tide is turning. The better medical schools are requiring definite, systematic study of the eye as an essential condition to graduation, and our best internal medical men now have a working knowledge of the ophthalmoscope, and interpret the diseases of the various coats of the eyeball in relation to general diseases, as a routine.

This is a renaissance. Following the discovery of the ophthalmoscope by Helmholtz, in 1851, for a number of years, great enthusiasm was manifested among medical men in the study of diseases of the eye. They believed that the ability to see, by the aid of the ophthalmoscope, the retina and optic nerve, the retinal artery with the blood coursing out through into the retinal veins would give them data by which they could interpret most diseases of the brain and many diseases of the general organism. This, let me say, was realized to the greatest extent in the clinical observations of diseases of the fundus and outer coats of the eye by that master clinician, von Graefe.

The general practitioner was much more adept in the use of the ophthalmoscope in those days than he is to-day. Gowers, in the latest edition of "Medical Ophthalmoscopy," bears me out in this statement, as regards his own country, England. He says, "When this book was written, twenty-five years ago, the subject with which it deals was more familiar to physicians, who constantly used the ophthalmoscope, than to ophthalmic surgeons; but the position of the two has been to some extent reversed during the years that have followed in consequence of the sedulous use made of the opportunity for the investigation of medical cases by those who devote themselves to the study of the eye."

Many of the diseases of the various tissues of the eye are due, as are those of other parts of the organism, to micro-organisms, or their toxins, and yet, the

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student who loses sight of the histologic basis of disease, and especially the embryologic relationships of the various tissues of the eye to those of the general organism, will be much handicapped in interpreting the disease pictures seen in this organ.

The eye is made up of the two primitive embryologic layers, ectoderm and mesoderm. The crystalline lens and the epithelial layer of the cornea and optic nerve represent the ectoderm in the eye, and therefore are genetically coordinate with the brain, the cord, the nerves, the enamel of the teeth, hair, nails and sensory epithelia, and we should expect that diseases of these various tissues would show in the eye, whether the cause be micro-organisms, disturbed metabolism or other causes, and so they do. In cases of rachitis we commonly find disturbance in the enamel of the teeth, known as "Horner's teeth" in conjunction with laminar cataract.

In herpes zoster and some other forms of vesicular keratitis, separating the epithelial layer from the cornea propria, in addition to anesthesia of the cornea, evidences disease of the gasserian ganglion. Other evidences of this relationship might be given. The same might be said of the mesodermic tissues in the eye; for example, the changes in the retinal vessels in albuminuric retinitis complicating chronic Bright's disease. These patients are what Schmeichler has aptly termed "connective tissue individuals," persons whose highly specialized organs and blood vessels become the seat of connective tissue processes.

Microscopic plants and animals and their toxins, affecting the organism in general, oftentimes manifest themselves in the eye. The conjunctivitis of measles is one of the prodromal symptoms of this disease. Rheumatism, scarlet fever, typhoid fever and influenza have this complication frequently. Disturbances in metabolism as well may cause disease of the conjunctiva. I shall enever forget, in the earlier part of my professional career, trying to cure a case of conjunctivitis in a long-standing case of gout by instilling sulphate of zinc into the eye. With each recurrent use of the medicine the patient became worse, and it was not until long after I was discharged that I appreciated the fact that this conjunctivitis was due to general disease and that my attempt to treat it as though it were a local affection was the cause of my failure.

The ophthalmologist often sees cases of interstitial keratitis of mild or severe type, this being the only clinical evidence of inherited lues. This knowledge, of course, should be in the possession of the family physician, for without it he will be unable to treat his patient intelligently.

Most general physicians have seen systemic gonorrheal infection especially manifest in the joint or joints, complicated by iritis, and this complication may be the only evidence of systemic gonorrheal infection in the case.

It is during the second stage of syphilis, that is, during the stage when the spirochæta pallida are principally circulating in the blood, not yet having invaded the solid tissue to any great extent, that the iris becomes inflamed, and, indeed, a diagnosis of syphilis in the second stage can be made out oftentimes by the syphilitic papules ranged around the pupillary border in contradistinction to the nodules in tuberculosis, which are near the root of the iris or in the mid-region of the iris. The early diagnosis of syphilitic iritis means, with the heroic use of unguentum hydrargyri, a saved eye, and the organism is at once put in the best defense against this protean enemy.

Tuberculosis of the iris is not so pathognomonic, but yet its location in the mid-region of the iris and at the root of the iris, the chronicity of the disease, and the color of the tubercles, which are a whitish yellow color, may be the only evidence of tubercular lesion present in the organism.

A physician can often clear up the mystery of disease by discovering that the pupils dilate irregularly when a mydriatic is used, there being adhesions of the iris to the lens or the finding of pigment spots on the anterior surface of the lens, which commonly means either syphilis or rheumatism.

It is probable that future studies will reveal that many other diseases of the eye, the etiology of which is obscure at present, are due to the toxins of micro-organisms or possibly to the micro-organisms themselves. I refer more especially

to phlyctenular diseases—trachoma, vesicular diseases of the cornea, scleritis and episcleritis, some forms of iritis, optic neuritis and possibly glaucoma.

The study of the eye in diseases of the brain is especially valuable. The student should not lose sight of the fact that in looking at the optic nerve he is looking directly at the brain, and the changes occurring in it represent more or less faithfully the intracranial or cord changes. It is my purpose here only to mention the more common, gross lesions; for example, optic neuritis in descending meningitis, choked disk in brain tumor and in brain abscess, optic atrophies as sequelæ of meningitis.

It is scarcely within the province of this paper to discuss the so-called "spinal cord diseases" manifesting themselves in the eye, as atrophy of the optic nerve, or as disturbance in the function of its musculature; for example, Argyll-Robertson pupil, or paralysis of the extraocular muscle, yet the great value of these symptoms in making a diagnosis is generally appreciated. Indeed, in brain diseases of whatever kind, the neurologist depends on the eye complications in making a prognosis as well as a diagnosis.

While it is true that diseases of the organism frequently complicate the eye, as far as we know, rarely, if ever, do organic eye diseases spread to other organs, excepting pyogenic processes resulting from perforating wounds and malignant disease of this organ. The same can not be said of the various functional diseases of the brain.

The extreme division of labor to which our urban population is subject, compelling the constant use of brain and eye in one particular task, produces brain fag and fatigue of the eye in persons of healthy, normal eyes. Those who are handicapped by having eyes of abnormal length, either too long or too short in any or all of their meridians, are more greatly fatigued at the end of the day. Sooner or later, nervous symptoms develop, the most common of which is headache over the brow or in the temples or in the occipital region, and occasionally headaches akin to neuralgia; and rarely migrainous attacks are thus precipitated.

The relationship of ocular fatigue to headache is now fully appreciated by most of our American physicians. More than 50 per cent. of my practice is treatment of headache cases referred to me by physicians. While this discovery has not directly saved life, I scarcely now can recall one during the last century that has relieved more distress.

This is an American discovery. Dr. Wm. A. Thompson and Dr. Weir Mitchell should receive the lion's share of the praise. There are physicians in our midst who do not believe in the relation of eye strain to headache and other nuroses, just as there are those who do not believe in vaccination for smallpox or the antitoxin treatment for diphtheria, but the advice can safely be given to these dissenters that the sooner they make use of the knowledge that eye strain is a source of headache the better it will be for their professional reputation.

Foolish and irresponsible claims that have been made by some ophthalmologists as to the etiologic relationship of eye strain to nervous diseases, some of them claiming to cure almost every nervous disorder by glasses, have partly been responsible for this minority attitude, and the writings of some neurologists in saying that glasses are of only temporary value, are equally as far from the truth. Time alone will cure these evils.

In this connection let me say that I believe the Snellen type chart which is hung upon the walls of the physician's office should never be used as a means of determining whether a patient is suffering from eye strain headache. As a matter of fact, the reading of the chart, whether the patient is able to read all or any part of it, has nothing to do with the question. Eye strain is found as often where the vision is normal as where it is reduced. It is solely a question of the over-use of the ciliary muscle or insufficiency of an extraocular muscle, and not acuity of vision. The family physician can, by process of exclusion and by the history of the case, usually make out a correct diagnosis, but in the final analysis the refraction must be investigated.

Proper glasses for a young person can not be prescribed without the patient first having used atropin or some other cycloplegic in the eyes. It is not far distant, in my opinion, when a scientific, systematic investigation of the eyes of

all school children will become a requirement for admittance to the schools, in place of the perfunctory and unsatisfactory method now in use. At the present time, if the patient can read all the letters on the card, he passes muster.

Not only children, but adults are thus allowed to suffer with preventable headaches, and attacks of hysteria and neurasthenia are precipitated which might be prevented from developing in these unstable nervous organizations.

I wish to say that I believe that the difficulty of fitting glasses is not generally fully appreciated by physicians. Accurate measurement of the refraction of the eye, so necessary to prescribing proper glasses, is a procedure requiring a long apprenticeship and the possession of a conscientious desire to do one's best work at all times; for it is the experience of ophthalmologists that the correction of a quarter of a diopter of astigmatism may cure headache and other nervous symptoms.

And, in conclusion, I hope I will not be taxing your patience too much by bringing to your attention a disorder which is yet misunderstood by many of our best physicians. I refer to squint (concomitant convergent strabismus) in children. This is commonly looked upon as an eye disorder. In many cases it is more a brain fault than an eye disorder. At bottom in most instances these are cases of faulty development of the brain, i. e., of the visual tracts and fusion centers in the cortex, and not a trouble *per se* with the muscles of the eye, as is yet too commonly believed. It is common knowledge that cataract in childhood must be removed early, before six years of age, the earlier the better, in order that the patient will have a useful eye afterward. Cataract occurring in later life can be removed at any time, even fifty years after, with good sight remaining.

But why speak of cataract in the child in connection with squint. In cataract in the young child, the brain end of the visual apparatus does not develop because the child *can not use the eye*; in squint, because the child by a trick of the mind suppresses the image and therefore *does not use the eye*. Like the cataract case it must be made to see with the squinting eye, the earlier the better. I have two cured cases, treatment having begun as early as 16 months of age. If treatment is put off until 7 years of age the squinting eye is amblyopic—blind—for useful purposes. Now as to the treatment, the squinting eye is usually handicapped by being a short eyeball and therefore needs lenses to correct this deformity. Rarely the eye is so defective that it is not amenable to developmental treatment. Operation is then advisable to improve the cosmetic effect. In the majority of cases, after the fitting of glasses, the treatment consists in compelling use of the squinting eye by bandaging up the good eye. Sometimes the instillation of atropin in the good eye will blur it to such an extent that the patient will use the squinting one. The brain cortex is whipped into use by means of the amblyoscope, a sort of stereoscope, thereby developing the fusion centers, thus causing more or less normal development of the central visual apparatus and consequent correction of the deformity. It is my opinion that there are many times the number of practically blind eyes from improper, or rather non-treatment, of squint than are due to ophthalmia neonatorium.

EYE DISEASES ASSOCIATED WITH NASAL AND NASOPHARYNGEAL DISORDERS.*

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That there is an association or relationship existing between nasal and eye diseases is a fact which is old and well established, and one which every careful observer who has worked in these special fields of medicine has noted time and again, and such an association is, moreover, readily anticipated when one considers the close anatomic relationship between these organs. They have the same

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nerve supply, the same mucous membrane, and to some extent the same vessels carrying blood to and from their tissues, as well as an indirect lymphatic connection. Then, too, they lie in such close proximity to one another that pathologic processes may readily extend from one organ to another by contiguity, and though the conformation and arrangement of these structures admit of the frequent extension of diseases from the nose to the eye, the reverse is by no means the case.

To understand this latter fact, we must remember that the drainage from the eye by way of the lachrymal apparatus is into the inferior meatus of the nose; that the submucous plexus of veins in the nose is drained partly into the ophthalmic vein and partly into the pterygoid plexus with which the inferior ophthalmic vein anastomoses; that these veins have no valves, and also that the lymphatics of the nose and orbit both terminate to a large extent in the internal maxillary and parotid lymph glands. Another reason for this fact is the size and proximity of the large air spaces known as the accessory sinuses of the nose, which almost surround the orbit, and from which disease may readily enter that cavity, either by direct extension or through the blood stream. In the light of these facts, then, it is reasonable to inquire as to what diseases of the eye we would naturally expect to be associated with disease of the nose and nasopharynx.

First, we would expect obstructions which involved the inferior meatus to produce obstruction to the normal flow of tears resulting in epiphora, and if unrelieved, later dacryocystitis, chronic conjunctivitis, or corneal ulceration, and we might also expect extension of infection by continuity through this route.

Second, we would expect obstruction which would interfere with the circulation to cause congestive attacks or congested conditions of the ocular tissues, resulting in photophobia, lachrymation, and various subjective symptoms, including possible interference in the working ability of the eye, or edema of the lids.

Third, from obstruction to the lymph flow, slow metabolic changes with disturbance of function and nutrition, or edema.

Fourth, from disease of a neighboring sinus with retention of pus, or disease of its bony wall, we might expect perforation of the orbital wall, with orbital abscess, or extension of inflammation, resulting in orbital cellulitis, or a local focus of inflammation involving a muscle, nerve or blood vessels lying at some particular point in contact with the sinus wall.

To these various conditions, which might reasonably cause associated eye disorders, we may add reflex disturbances caused by contact of the nasal mucous surfaces which could produce a train of symptoms similar to what would be produced by introducing a foreign body, probe or speculum into the nose, or what sometimes follows cauterization of a turbinal (i, e., lachrymation, photophobia, congestion of conjunctivæ and eye pain), and other reflex disturbances, which, if perpetuated, might be responsible for or lay the foundation for an active inflammation.

Having thus theorized as to what might occur under the above named conditions, let us see what confirmation we may obtain from clinical observation.

Grünwold,[1] writing on this subject, says: "In the eye it is the lachrymal apparatus that most commonly participates in nasal affections. Even the irritation attendant upon introducing a speculum or probe into the interior of the nose is immediately followed by reflex lachrymation in the eye of the same side, and in a similar way swelling at the orifice of the lachrymo-nasal duct in the inferior nasal meatus may lead to obstruction of the lachrymal flow and epiphora."

Wood[2] said that "the ocular irritation that results in the over-production of tears or their insufficient drainage, or both, quite commonly originates in nasal disease, and that all cases of chronic lachrymal disease should have a thorough nasal examination."

The nasal conditions which are most likely to cause lachrymal obstruction are enlargement or deformity of the inferior turbinal or deformity of the septum,

1. Grunwald: Atlas of Mouth, Pharynx and Nose, p. 29.
2. Wood: Ophthalmology, 1906, p. 187.

crowding the turbinal against the lateral wall of the nose, though ozena and sinus disease have been known to cause suppurative disease of the lachrymal sac. As illustrative of the interference with blood and lymph circulation, we have the old and well known observation of the dependence of phlyctenulæ upon nasal obstruction in the cases of adenoids or enlarged tonsils, and Grünwald says that chronic inflammation of the eyelids and phlyctenular keratitis, which are a part of the symptom-complex of scrofula, are practically always of nasal origin. The relief from phlyctenulæ which so often follows the removal of adenoids or tonsils, or both, may not, however, confirm this statement, that the improvement is through improved local circulation, as the local improvement may only be a part of a general improvement due to improved breathing.

Acute and subacute attacks of conjunctivitis are frequently associated with nasal obstruction, and though no epiphora exists in these cases they may be due partly to interference with drainage and partly to impeded or contaminated circulation; and Vergeley[13] reports one case of phlegmon of the orbit directly following acute tonsillitis, which, if properly judged, certainly gives evidence of contamination of the circulation.

Illustrating extension of disease from neighboring sinuses, we have the oft-reported cases of orbital abscess and cellulitis, examples of which are cited by Gutmann,[4] and many others, due either to perforation or extension of inflammation through a thin sinus wall (particularly from the ethmoidal cells and occasionally from the frontal sinus), and encroachment of a sinus upon the orbit (again, usually, the ethmoids) by distention of the sinus cavity, with mucocele, but without perforation producing exophthalmos, as reported by Cirincione,[5] Johnson and others. Posey,[6] Risley,[7] and others have associated certain cases of edema of the eyelids with or without slight proptosis, with diseases of the accessory sinuses, and cases which have in some instances proven later to be thrombosis of the cavernous sinus due to sphenoidal disease have been reported by St. Claire Thomson.

In two instances with which the author has come in contact a sinus has ruptured into the lachrymal sac, producing lachrymal mucocele, a fact also recorded by Green,[3] of St. Louis.

Posey[6] and others have reported cases of ocular palsies which were attributed to sinus disease and relieved by their treatment. These cases are probably explained by extension of the disease to a muscle or nerve through a thin-walled sinus, or by a toxic peripheral neuritis.

Onodi,[8] Parsons,[9] Risley,[7] Posey[6] and many others have reported cases of optic neuritis of accessory sinus origin; and Onodi[8] explains that the anatomical formation of the optic canal may allow of extension of disease from either the posterior ethmoidal cells or the sphenoidal sinuses in certain cases.

To the above-mentioned conditions may be added cases of choroiditis, iritis, glaucoma, etc., which have been reported by various individuals as having a direct connection with some nasal or nasal accessory sinus disease, but in which the element of coincidence must always be considered, as satisfactory explanation or demonstration by postmortem, etc., have not been given.

Again, various superficial diseases of the cornea have been reported by Ziegler[10] and others in which the source of the infection has been assigned to the accessory cavities of the nose, and the route of passage the lachrymal tract. Ziegler believes that 90 per cent. of superficial corneal lesions take their origin directly from pre-existent pathologic processes affecting the intranasal tissues and secretions.

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3. Green: Ophthalmic Record, June, 1906.
4. Gutmann: Zeit. f. Aug., 1906, xv, 403.
5. Cirincione: Palermo; La Clinica Oculistica, January, 1907.
6. Posey: Journal of Eye, Ear and Throat Diseases, March and April, 1905.
7. Risley, S. D.: Penn. Med. Journal, June, 1904.
8. Onodi, Professor (Buda Pesth): Brit. Med. Jour., Nov. 5, 1904.
9. Parsons, Hubert: Dis. Eye, p. 401.
10. Ziegler, S. Lewis: American Medicine, April 9, 1904.

Fuchs[11] describes a superficial puncture keratitis which is accompanied by acute conjunctivitis and catarrh of the air passages, which soon passes over the irritative stage, but which leaves spots of infiltration in the cornea for months. He does not explain the modus operandi of its occurrence.

The clinical reports of reflex disturbances of the eye of nasal origin are very numerous indeed, and almost every known disease of the eye has at times been attributed to reflex nasal irritation, and though the literature is voluminous and not always convincing, some good facts have been gleaned from the mass; and here, again, the causes attributed are nasal obstruction and sinus affections—both suppurative and non-suppurative. Ziegler,[12] writing on the nasal origin of reflex neuroses, says: "We must accept as an infallible rule the dictum that pressure contact in the nose will always excite some reflex disturbance when any hyperesthetic area is impinged upon." Here, of course, he refers to contact of turbinals, especially the middle turbinal with the septum, or irritation of a turbinal by a septal spur or ridge, and contact with the septal tubercle. The ocular manifestations of these irritations are supraorbital neuralgia, eye pain, lachrymation, conjunctival congestion, burning and smarting of the lids, tiring of the eyes, blurring of vision and inability to obtain correcting lenses which give relief, the patient going about from one oculist to another, but without help. These cases Ziegler[13] terms nasal asthenopes, and he further says: "They will never find ocular comfort until the intranasal lesion is corrected."

This same class of cases is cited by Wood[2] as being of reflex nasal origin, but Wood thinks the accessory sinuses are many times the principal offending structures. We may, however, rightly conclude that nasal deformity is at the bottom of most such cases, as without deformity and resulting obstruction to drainage and ventilation of these spaces, chronic sinus disease rarely occurs.

In conclusion, we may say that nasal and nasopharyngeal disease may be responsible for headaches of an ocular type, supraorbital neuralgia, localized pain in the eyes, asthenopic symptoms, vascular disturbances, congestion of conjunctiva, edema of lids, exophthalmos, orbital cellulitis and abscess, optic neuritis—usually retrobulbar, ocular palsies, and phorias, keratits, phlyctenulæ of either the conjunctiva or cornea, and diseases of the lachrymal apparatus.

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THE NATURE AND CAUSES OF NASAL MUCOUS POLYPI.

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The etiology and nature of nasal polypi have given rise to such varying views among rhinologists that a brief review of the literature on this subject with special reference to the relation of polypi to the nasal accessory sinuses seems to be opportune. The rhinoscopic appearance of the ordinary nasal polypus is familiar and its description is therefore needless, the study of the nature and origin of polypi, however, is still progressing and of interest.

Nature of Polpi: The nasal polypus is often but erroneously spoken of as a myxoma or mucous tumor. Greville Macdonald,[1] after examining hundreds of specimens, says that he has never succeeded in finding a true myxoma cell in them. Allen,[2] in 1893, after a thorough study of the subject, claimed that "polypi are not myxomata; a myxoma is a tumor composed of embryonal connective tissue. It is the pathological reproduction of a tissue which occurs physiologically in the embryo. Such a tumor consists of a firm network of anastomos-

11. Fuchs: Textbook of Ophthalmology; Third Edition, English, p. 199.
12. Ziegler, S. Lewis: New York Medical Journal, Nov. 7, 1908.
13. Vergeley: Jour. d. Med. d. Bordeaux, July 19, 1896.

* Read before the Chicago Heights Branch of the Chicago Medical Society, April 6, 1909.

1. Macdonald, G.: International Clinics, 1895, vol. iv, series 4.
2. Allen, S. E.: Cincinnati Lancet Clinic, 1893, N. S. xxx.

ing stellate cells, the meshes thus formed being filled in with a homogenous granular substance rich in mucin. The fluid of the ordinary soft nasal polypus is not a solution of mucin but of serum albumin." In furtherance of the proof of these statements he has made certain tests. "Mucin solutions do not coagulate on boiling, the vitreous humor of the eye remains clear after boiling. The clear fluid squeezed from nasal polypi does coagulate on boiling. Mercuric chlorid solution added to a solution of mucin does not produce precipitate. Added to fluid from polypus a precipitate is produced." Both Hopman and Zuckerkandl have demonstrated the albuminous nature of the fluid in ordinary nasal polypi.

Location of polypi in the nasal cavity: Casselberry,[3] in 1894, refers to Zuckerkandl's researches on cadavers demonstrating that two-thirds of all nasal polypi originate from the middle meatus beneath the middle turbinated body and two-third of their number take origin from the edge of the hiatus semilunaris, which is a crescentic opening into the infundibular space into whose upward and downward continuation enter, respectively, the frontal and maxillary sinuses, and which is located high up beneath the middle turbinated body. Voltolini and writers of an early date placed the situation of polyps far above on the upper walls of the nasal cavity. The sections of Zuckerkandl have shown that in most cases the attachment is to be found on the lateral nasal wall and especially on the ethmoidal (middle and superior) turbinated bones and the lips of the hiatus semilunaris and edges of the ostia ethmoidalia and maxillaria. In practice it is well to have in mind the middle turbinated bone and the region it covers. Jonathan Wright[4] has found that the majority of polyps spring from the anterior edge of the middle turbinate or edges of the hiatus semilunaris, next from the upper and posterior portion of the middle turbinate, and, lastly, that they may be found in the interior of a bulbous middle turbinate or about the outlets of the accessory sinuses. Very rarely polypi originate from the septum and inferior turbinate bone. On examination of a specimen in the region of the hiatus semilunaris it will be found that it is very difficult, yet very necessary, to see and remove beds of small polyps from the crevices of the lateral wall in the middle meatus referred to. Mucous polyps may also appear in the antrum of Highmore, and in the cavities of the frontal, ethmoidal and sphenoidal sinuses. Zuckerkandl observed them in the antrum of Highmore as pedunculated outgrowths of its membrane, as bands stretched across the walls of the sinus and as more diffuse hypertrophies.

THEORIES AS TO PROBABLE CAUSES OF NASAL POLYPI.

There are various theories as to the probable causes of these growths. In the earlier days polypi were looked upon as neoplasms, which simply needed removal by various methods to effect a cure. As time advanced opinions have changed considerably and the nasal polypus is at present considered an inflammatory product and not a true tumor, and rhinologists of the present day are practically agreed that the removal of the polypi is but the first step in the cure of an affection underlying its production. Casselberry, in 1894, declared that it was evident that nasal polypus is usually a symtomatic manifestation of a form of degeneration of the ethmoidal muco-periosteum which frequently involves not only the middle turbinate bone but also to some degree the ethmoidal cells, and for convenience he called this condition ethmoiditis. Again, in 1892, he says that hypertrophic rhinitis or that stage or form of true nasal catarrh which is characterized by enlargement of the nasal tissues, is invariably associated with nasal polyps and usually stands to it in relation of cause and effect. He further states that after removal of polyps the condition which has caused or produced them must be relieved, and in the majority of cases this will be found to be hyperthrophic rhinitis:

There seems to be a close relation existing between the ethmoiditis of Casselberry and the formation of nasal polyps. Bosworth[5] mentions three forms of

3. Casselberry, W. E.: New York Med. Jour., 1891, Vol. liv; International Clinics, 1892, Vol. iii, N. S. ii.
4. Wright, J.: Am. Jour. Med. Science, 1898, N. S. cxvi.
5. Bosworth: Text-book; Diseases of Nose and Throat.

ethmoiditis: (a) Extracellular myxomatous degeneration, (b) intracellular myxomatous degeneration, and (c) purulent ethmoiditis, which may or may not be associated with myxomatous degeneration of the ethmoid, but which usually is associated with nasal polypi.

Jonathan Wright has described the distinction between nasal polypi and true myxoma and believes that nasal polypi are of inflammatory origin and ascribed to hypertrophic rhinitis. Bosworth believes that purulent ethmoiditis with polypi should be regarded as a sequel to simple polypoid degeneration and that suppuration of the ethmoid cells occurs only after polypoid tissue has accumulated sufficiently to obliterate their natural drainage channels. He further states that the natural result of a damming back of a mucous secretion is the development of a purulent inflammation. As there is no pathologic proof back of his statement and there is no striking clinical evidence to support it, it may be regarded as at least unproven. Grünwald holds the extreme view that polypi are always secondary to empyema of the accessory sinuses of the nose, while Woakes[7] is firm in his conviction that mucous polypi are caused by necrosing ethmoiditis. This is undeniably one of their causes, but certainly a rare one. Jonathan Wright contends that nasal polypus is the direct result of suppuration in the cells or the sinuses communicating with the nose or inflammation of the periosteum covering the middle turbinate dependent on previous purulent inflammation within the bone itself.

Grünwald holds to the opinion that nasal polypi are almost pathognomonic of sinus suppuration. In 33 cases of polypi he found evidence of sinus suppuration in 28. He found suppuration most commonly in ethmoid cells either alone or together with other sinuses. He states that sinus suppuration was found in 82 per cent. of polyp cases, while the remainder showed no abnormal secretion in the nose. Alexander, in 104 cases, found suppuration in only one-third. Kronenberg, in 44 carefully observed cases, found suppuration in 27 and no abnormal secretion in 6. McBride,[8] Chiari,[9] Skrodzi and others found suppuration in still smaller percentage. Lack[10] claims that suppuration is certainly not present in more than 60 per cent. and can not be demonstrated with certainty in more than 30 or 40 per cent. of polyp cases.

As early as the seventeenth century it was observed that the removal of a lamina of bone was the best means of preventing a recurrence of nasal polyp. In recent times Woakes was the first to draw attention to this. He claimed that polyp was not a disease *per se* but only a prominent symptom of a disease of the ethmoid bone, which he called ethmoiditis.

He described a series of morbid changes beginning with fibrosis; going on to obliteration of the arteries and absorption of the bone with development of bony cysts, polypus and granulation tissue, until finally interstitial death of the bone as necrosis results. He described the clinical features of the disease as, first, an enlargement, then a cleavage of the middle turbinate with swelling of the overlying mucous membrane; from the cleft in the bone polypi might project. A fine probe inserted into the cleft would detect bare, friable, carious bone, which might also be found by passing the probe under the turbinate into the anterior ethmoid cells or above it into the posterior ethmoidal cells. The clinical evidence was supported by microscopical examination. The condition described is certainly not a usual or frequent one.

Thurston found bone disease in three pieces removed by Woakes; Martin found twenty portions of bone—ten had absorption of bone. These observations have been much disputed. Lack is a strong advocate of the theory that bone disease is the chief factor in the formation of nasal polypi. In 1903 he claimed that "bone disease is a constant concomitant of nasal polypi," and more recently he

6. Grünwald, L.: Treatise on Nasal Suppuration, 1900.
7. Woakes, E.: British Medical Journal, 1885, I, 701; London Lancet, 1885, I, 619.
8. McBride: Tr. Med. Chir. Soc., Edinburgh, 1886, N. S. v.
9. Chiari, C.: (Trans.), St Louis Courier Med., 1885, Vol. xiii, xiv.
10. Lack, H. Lambert: Diseases of Nose and Accessory Sinuses, 1906.

says: "Bone disease is a constant feature of nasal polypus; polyi, in fact, may be regarded as circumscribed edematous infiltrations of the nasal mucous membrane the result of osteitis in the underlying bone."

Zuckerkandl found bone underlying polypi usually healthy, except for changes due to hyperplastic periostitis. Luc found no evidence of bone disease in two cases and Zuckerkandl and Yonge[11] have carefully examined the bone to which nasal polypi were attached and found no definite bone disease. Yonge collected a number of specimens in which a piece of bone was removed with an attached polypus and submitted some of them to an expert pathologist for examination and report. The report showed that in none of the sections submitted to the pathologist were any signs of rarefying osteitis to be detected; a few gave evidence of periostitis. Others state that, as a matter of clinical evidence, they have never seen definite necrosis of the ethmoid in cases of polypi; and others again state that bone changes occur in a small percentage but that they are the result and not the cause of polypi.

My observations lead me to believe that nasal mucous polypi are the result of chronic inflammation which in certain cases produces the edematous tissue hypertrophy of the ethmoid structures called polypus formation, and that not infrequently softening and absorption of the bone of the ethmoidal cells and ethmoidal turbinates takes place.

In order to produce polypi the inflammation must exist in the upper portions of the nasal cavity whose walls are chiefly formed by the ethmoid bone and its processes. The exciting cause undoubtedly may be suppuration of some one of the nasal accessory sinuses. But the contentions of Grünwald, who maintains that nasal polypi are almost pathognomonic of sinus suppuration and of Woakes, who holds to the opinion that mucous polypi are the result of necrosing ethmoiditis, seem to be too radical, and while sinus suppuration is sometimes found with the condition of nasal polypi and while we occasionally find ethmoidal necrosis under the same conditions, nevertheless, sinus suppuration or necrosing ethmoiditis are not frequent enough to be classed as the almost exclusive causes of nasal mucous polypi. It seems to me that in predisposed patients the reverse condition of suppuration in the sinuses may depend on the presence of polypi in the nasal cavities, but is by no means a necessary result of them. In such instances, if the sinuses become inflamed and secrete mucus freely as in an acute cold, the discharge is dammed back by the obstructing polypi and stagnating, becomes septic and leads to suppuration due to infection with the pyogenic germs always present in the nasal cavity. In such cases the suppuration may be truly said to be secondary to the presence of nasal mucous polypi. It is, however, certainly not a very frequent occurrence, for polypus patients do not seem especially liable to acquire acute or chronic sinuitis either of the frontal, maxillary or sphenoidal sinuses.

In conclusion, I would say that the presence in the nasal cavity of mucous polypi is an indication of possible disease of some one of the accessory sinuses of the nose, that where such disease exists, in the majority of cases, it is a chronic ethmoiditis.

Nasal polypi are not necessarily dependent upon suppuration in the accessory cavities of the nose, although they are sometimes found associated with such suppuration. Suppuration in the nasal sinuses may result from the presence of mucous polypi in the nose. Nasal polypi should be considered as a symptom of a disease which in most cases demands more than the simple removal of the polypi to effect a permanent cure. In the majority of instances, after the removal of the polypi, which is best performed by means of the cold wire snare and punch forceps, the thorough removal of all diseased or carious bone which may be found in any of the nasal sinuses is absolutely essential to the prevention of the recurrence of nasal polypi.

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11. Yonge, E. S.: Polypus of the Nose, London, 1906; Med. Press and Circ., (London), 1907, N. S. lxxxiv.

THE TONSIL QUESTION.*

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"To be or not to be, that is the question." Shall these peculiar glands that we find in our throats be allowed to remain where they grew to perform whatever function Nature assigned them, exposing us to whatever dangers their peculiar formation invites or shall we treat them as diseased parts, as a menace to the organism and to be removed whenever possible as we remove malignant growths. This is a question that at the present time commands the attention of all throat specialists and deserves the most careful consideration by every competent doctor.

There have been endless speculations and investigations during the last century regarding the physiology of the faucial tonsils. It is needless here to go over this ground save to say that nothing definite has been discovered. That the lymphatic tissue surrounding the tonsillar crypts has the same function as other lymphatic glands seems to be apparent, but the physiology of the crypts themselves is not so apparent, or, at least, the necessity of their secretion is not understood. Dr. Bosworth, in discussing the matter, rather dryly states that perhaps "the reason why so little light has been shed on this question is that the investigators have been trying to discover the physiological functions of a pathological lesion," and again: "From a practical point of view there are no tonsils in a healthy throat." Another investigator, one of the conservative men of our specialty, says that "practically every tonsil that is noticeable in the human throat is pathological."

While we know so little about the physiology of the tonsils there is very general knowledge regarding their pathology, and diseases of the tonsils constitute an important part in the practice of most doctors.

There is the tonsillitis that precedes or accompanies the exanthemata. There is liability to tonsillitis in every inflammation of the respiratory tract from rhinitis to phthisis. It accompanies many diseases of the alimentary tract and of the skin and insists upon recognition in certain general diseases, notably syphilis and rheumatism. In short, there is liability to inflammation of the tonsillar tissues in almost any infections that affect other tissues of the body.

According as we look upon this throat condition as preliminary, possibly causative, or merely concomitant does this tonsil question assume greater or less importance.

In syphilis, certainly, there is no suspicion of the tonsils acting as a port of entry, and the vast bulk of evidence would absolve them from the causation of the great majority of skin and intestinal disorders. But there is an open question here. There is no *a priori* reason why the infective cause of acne, for instance, should not originate in the tonsils nor that stomach troubles might not be occasionally caused by swallowing infectious pellets from tonsillar crypts.

In the catarrhal inflammations of the respiratory tract, similarity of tissue would naturally account for simultaneous inflammation of the mucous membrane of the tonsils and surrounding parts. Right here we must consider the peculiar anatomy of the tonsil which may lead to results of far reaching importance and brings suspicion that the glands may be ports of entry for numerous diseases.

As is well known to all physicians, the faucial tonsil is not a single gland, but a collection of ten or a dozen glands forming the so-called crypts of the organ. These crypts dip down very deeply, frequently three-quarters of an inch in a moderately large tonsil. They are surrounded by lymphatic tissue similar to that of other lymph nodes. We have, instead of the minute glands of the ordinary mucous membrane draining through lymph channels into a distant lymphatic, a number of large pits where the mucous membrane dips down into the lymphatic substance itself. These pits are capable of holding an immense

* Read before the West Side Branch, Chicago Medical Society, March 18, 1909.

amount of infective material but are so arranged that, during swallowing, they may be emptied as the tonsil is squeezed between the muscle of the anterior and posterior pillars and the superior constrictor. When they all are so emptied no danger need be apprehended as the tonsil keeps itself drained. On this account the simple hypertrophied tonsil whose crypts all open on the face of the organ is the least harmful kind that we meet. In probably a larger proportion of cases it is found that the tonsil does not protrude between the pillars with clear crypts but that the upper and front parts are covered with a fold of membrane derived from the anterior pillar known as the plica tonsillaris. This plica is very generally mistaken for the surface of the tonsil but can be readily recognized as a distinct membrane on close examination and does not contain crypts. It will be found covering closely the tonsil proper and closing up the openings of certain crypts, notably those on the upper surface of the tonsil which should empty into the so-called supratonsillar space. Failure to recognize this common condition by the general practitioner has caused the throat specialist to be subjected to much undeserved criticism for undue radicalism. A spray directed at right angles below this plica, if it is not adherent, will very frequently dislodge the little cheesy masses so often found in the crypts of otherwise healthy appearing tonsils, showing conclusively that proper drainage does not exist.

This submergence of the tonsil varies in degree. In the commonest form perhaps one-fourth to one-third of the front of the tonsil is covered and about the same width of the upper surface. In others, the so-called fully submerged tonsils, very little if any of the real glandular substance can be seen even when the patient gags. This is the typical tonsil in the new born child.

The peculiar arrangement of the cavities of the tonsil, one crypt running into another like the spaces in a sponge, is the great reason of the frequent exposure of this gland to infection. Situated at the very entrance of the alimentary tract, constantly in contact with the secretions and contents of the oral cavity, the most notoriously infectious of the body, particularly in young children whose method of investigating every object found is by promptly putting it into the mouth, is it any wonder that these crypts can practically always be found containing multitudes of bacteria? The germs of pneumonia, tuberculosis, influenza and diphtheria are frequent. The commoner pus cocci are always present.

Against these various bacteria, the lymphocytes of the tonsillar stroma are waging a constant fight, coming out through large interstices in the epithelial lining into the crypts to engage in this unending struggle. The result of this action is a whitish mass of dead lymphocytes, pus cells and epithelial detritus which is ordinarily forced out by the squeezing process before mentioned. If this is prevented by any obstruction, inflammatory or otherwise, it forms the peculiar cheesy masses so well known to all.

It would be impossible in a paper of this kind to even give a résumé of the various experiments made to show either the infective character of the crypts or the defensive work of the lymphatic stroma. Coloring matter rubbed over the tonsils has been found in specimens removed on successive days in the crypts, then in the lymphatic tissue of the gland, then the lymph channels connecting with the nearest node at the angle of the jaw, then in the other deep glands of the neck running down toward the pleura of the apex of the lung. Young healthy pigs have been fed on tuberculous matter, and in varying times have shown tubercular germs and giant cells, first in tonsils, then in the cervical glands. On the other hand, while germ growth is the rule in the cavity of the crypts, it is rarely found in the lymph tissue itself, although this tissue so often shows the characteristic condition so generally found where there is absorption of toxins. Space is lacking to go deeply into this.

Bacteriologically speaking, the case against the tonsils is not conclusive. We are met by much the same disappointment as in the examination of rheumatic joints. Clinically, however, the connection between tonsillar infection and other diseases is overwhelming. The tonsils are blamed by many as the starting point of measles, scarlet fever and other exanthemata, rheumatic heart diseases and arthritis, influenza, adenitis, osteomyelitis, pleurisy, iritis, phlebitis, some vari-

eties of nephritis, chorea and tuberculosis. In many of these the case seems not well made out, though detached instances of such infections undoubtedly occur. In the rheumatic affections, however, there is an immense mass of clinical evidence which demands careful consideration.

American observers find plain evidence of tonsillitis accompanying or directly preceding acute rheumatism in from 16 to 29 per cent. of all cases. Charles S. Kiefer, of the U. S. Army, in a series of 276 cases of acute rheumatism, found that 21.3 per cent. had a previous tonsillitis. Acting upon this he treated 60 patients with tonsillitis by local applications of dry aspirin, with the result of less spread of inflammation, no general disturbance, no ulceration of tonsils, average duration of sickness three days and no joints affected. In 60 patients treated by the customary methods with guaiac, tincture chlorid of iron and peroxid, a number had swollen necks and severe general disturbance. Ulcerations were frequent, average duration was six days and 15 per cent. had joint rheumatism.

Price Brown quotes Wagner, of San Francisco, as stating that he has found in the synovial fluid of the knee joint in two cases and in the urine of nearly all of his cases the same micro-organism he discovered in their tonsils, although clinical history proved that they had been free from other diseases prior to their tonsillitis.

In Germany Kleiminger found lacunar tonsillar trouble in 41 per cent. of articular rheumatism, nephritis and other streptococcal infections, while earlier tonsillar trouble was found in 27 per cent. of the same diseases. In another place the same author designates the tonsils as the point of entrance in 83 per cent. of the streptococcal infections. The extensive investigations of Grober bear out these deductions. The German observers, as well as those who have had the opportunity to go more deeply into the matter in this country, state that it is especially in the milder forms of tonsillar trouble that general infection is to be expected. Where there is severe reaction in the tonsils it shows a more stubborn resistance at the point of entry with greater liability of damming back the invasion. Very many detailed accounts are found scattered through medical literature during the last few years of joint and cardiac rheumatism following after slight tonsillar troubles. During the preparation of this paper in the mild epidemic of pneumococcal catarrhal fevers of the past few weeks I have seen three cases of insignificant tonsillitis followed directly by endocarditis in previously healthy children. All doctors of experience can call to mind cases of rheumatic joints ushered in by tonsillar troubles.

Articular rheumatism is only a name for a serous synovitis whose origin we do not understand. It is now pretty generally conceded that this disease is the effect of toxin absorption from various bacterial infections. Artificial rheumatism has been caused by injections of dead pus cultures and in a very few cases the pus cocci have been grown from rheumatic joint fluid. As Lovett says: "If acute synovitis of one or more joints occurs in the course of scarlet fever we at once call it scarlatinal arthritis. If the cause of the infection is not apparent we call it articular rheumatism," and again: "In many cases the source of infection cannot be found, and in such cases it is well to remember the tonsils and the presence there of pyogenic bacteria."

Goodale's experiments of painting the tonsil with carmine shows us that there is a current in which the color particles tend from the surface of the tonsil through the crypts into the lymphatic circulation. Granted that living germs themselves rarely have been discovered, it is evident that toxins may circulate in this current and reach any part of the body. While conclusive proof may not yet exist of the tonsillar causation of rheumatism, the presumptive evidence is very strong. We have so long been accustomed to think of rheumatism causing tonsillitis that we are somewhat slow to reverse our ideas in this regard.

In this connection I may be pardoned for quoting at length from Prof. Grünwald, of Munich. It may be noted that the following statements were published in his book, translated into English in 1903, several years before this matter attracted much attention in this country even as a serious question. He says:

"A description of the lacunar inflammation of the pharyngeal ring would be anything but complete, in fact, would be lacking in an important essential if it

failed to include the complications which are often much more important than the local condition. In the majority of cases the invading army of cocci encounter the resistance of the inflamed follicles; these immediately pour out numbers of leucocytes into the intervening spaces, and the advance guard is checked by the lymph-glands of the affected region, so that, without exception, glandular enlargement accompanies every attack of angina. But as soon as the normal outpouring of leucocytes begins to be insufficient, there is not in the whole body a better port of entry for the invasion of fungi that have not been damaged by secretions than is found in the lacunæ of the tonsils. Accordingly it is common to see, after tonsillitis, irritations or even grave inflammations of the serous membranes. Indeed, clinical experience makes it probable that the source of various inflammations of serous membranes in which no other definite cause can be discovered is to be sought in the pharyngeal ring, whether the latter has been acutely diseased or only predisposed to the reception of pathogenic germs on account of former attacks or of some structural abnormality. The whole army of these acute febrile and sometimes very harmful inflammations of serous membranes has not inaptly been attributed to cryptogenetic septicopyemia and this is true, but in a special sense of the term, since they arise from the crypts of the tonsils. These affections, including pleuritis, endo- and pericarditis and the cutaneous manifestations by which they are accompanied (purpura, erythema nodosum, and the like), have long been recognized as possessing a certain causal connection, and this is now explained by the discovery of their common origin. Slight irritations, especially of the joints, are unquestionably much more common than is generally supposed, because no mention is made of them and they sink into insignificance beside the febrile pain. On the other hand, the more severe affections of the serous membranes so dominate the picture that the original angina is quite overlooked, or at least forgotten, and, as the pathogenesis is not determined, the proper measures to prevent recurrence of the attacks are neglected.

"Among the rare diseases of serous membranes is inflammation of the tunica vaginalis of the testicle. A number of cases of this form of orchitis and one case of peritonitis have, however, been observed. That disseminated metastases of true pyemic character—septicophlebitis—occasionally occur is readily understood from what has been said.

"Even pneumonia has been observed to follow lacunar angina in a number of instances, although the bacteriologic connection was not very clear, while, on the other hand, in the inflammation of serous membranes the same streptococci and staphylococci were found as in the original angina. The occurrence of a febrile albuminuria or true nephritis after tonsillitis presents nothing characteristic, as it is a phenomenon common to all acute infectious diseases.

"In connection with the pathogenesis of general septicopyemia the fact is worth mentioning that osteomyelitis has been observed as a sequel of angina, identical fungi being demonstrated in the tonsils and the pus contained in the bone-marrow. The most typical case of the kind was one of simple fracture of the humerus, which developed symptoms of osteomyelitis immediately after an intercurrent attack of angina. Some of these complications, including the milder ones, especially simple irritation of serous membranes, are probably due more to resorption of toxins than to a true metastatic process. The same pathogenesis applies to the neuritis which sometimes follows simple angina, as well as pharyngeal diphtheria."

Even more common than rheumatism, it is claimed by those who have studied this matter, is a mild form of parenchymatous nephritis accompanied by partial suppression of urine and transient albuminuria. It is claimed to be of tonsillar origin in 41 per cent. of cases. Adler claims that this form of nephritis is found in 75 per cent. of all cases of tonsillitis. It behooves us to investigate thoroughly the hidden pockets of the tonsils in these very common kidney conditions.

Again there can not be too careful study of the tonsils in every case of cervical adenitis. Jacobi claims that there is less adenitis from tonsillar infection than from infections of neighboring parts. This is doubtless true in the beginning of an inflammatory trouble as the stroma of the tonsil can be regarded as the lymphatic gland of the crypts themselves. In other words, the tonsillitis itself

is the first evidence of adenitis. Chronic infections, however, of the neighboring parts are almost negligible in comparison with those of the tonsils so that in practice it will be found that there is a very intimate relationship between tonsillitis of all varieties and cervical adenitis. Schlenker and Kruechmann have apparently found in their extensive investigations that a large proportion of the enlarged cervical glands of children are tubercular and accompanied by tuberculosis in the tonsils.

In autopsies of 136 cases of pulmonary tuberculosis conducted by seven German investigators, 94 cases of tonsillar tuberculosis were found, or 69 per cent. Such tonsils clinically do not differ in appearance from the ordinary varieties and the cervical adenitis is frequently our only method of discovering their diseased condition. The presence of the tubercle bacilli in the crypts is exceedingly common. In the lymphatic tissue surrounding very few bacilli are found, perhaps a few giant cells. Goodale, in seven cases where he removed tonsils because of cervical adenitis, had the organs studied by Jonathan Wright, who found them all tubercular. In every case immediate improvement took place in the condition of the cervical glands and the general health of the patient.

Personally, the writer has for years been opposed to the indiscriminate removal of these cervical glands and has often saved patients from the necessity of this operation by removing the tonsils. It may be asked, "Why not remove the glands in the neck if you take away those of the throat? Enucleation of the tonsil is often a more difficult and dangerous piece of surgery than cleaning out a chain of cervical nodes." The difference is that in the tonsil will be found the tubercular deposit, an ever growing or ever renewed source of infection, whereas the glands are seldom more than hypertrophied nodes from toxin absorption. Where they have become broken down and actually themselves sources of infection, they, of course, require removal. Nothing, however, can be more illogical than an extensive enucleation of all the glands of the neck so hideously scarring the patient and yet leaving the tonsil itself the original source of the trouble. Yet this has been the rule but a short while ago, and is still extremely common even with surgeons otherwise very careful.

Lastly, a word must be said about a common ailment more closely related to the tonsils, namely, quinsy. Few more distressing ailments exist than this peritonsillar infection. As is now well known, the source of the infection is tonsillar while the abscess is extratonsillar. A radical removal of the gland, no easy matter by the way, on account of old adhesions, absolutely prevents recurrence. Recurring tonsillitis should be placed in the same category as quinsy.

It is not necessary now to discuss the other diseases mentioned, as their relationship with tonsillar infections is not yet well enough authenticated. In these four here treated, rheumatism, either articular or cardiac (perhaps also the so-called muscular rheumatism), nephritis, cervical adenitis and recurring tonsillitis and quinsy, the tonsil question calls for an answer. Shall these glands be removed or not? It is a serious question not always easy to decide, for this operation is not a trivial one. Do not for a moment think that the ordinary snipping off the projecting tonsil with a tonsillotome is meant. Any tyro can do the guillotine operation, but it removes only a part and that the least harmful. In the conditions mentioned in this paper, that operation is worse than useless. Entire enucleation of a bad tonsil by dissection is a formidable operation. Few men without experience in throat work care to attempt the second case, and the man with the most experience is always the most modest in his claims. The one who talks loudest regarding his tonsil work will usually be found to use a simple guillotine and leave the outer half of the organ for some one to dig out afterwards, if, indeed, the patient is not convinced that all operations are of no avail.

Personally, I started out in tonsil work and have been for years very conservative. Added experience has had an effect the opposite of the rule, and I am becoming inclined to be much more radical. If I were to answer my own question it would be thus: In all cases of recurring tonsillitis and quinsy, let the patient

decide whether one sore throat of only moderate severity on each side seems better to him than his expected attacks. The danger of hemorrhage can be considered slight in comparison with dangers of possible infection of other organs.

In all cases of distinct cervical adenitis remove tonsils thoroughly before considering the question of cleaning out the glands of the neck. In the vast majority of cases the external operation will not then be necessary. In all infectious diseases of streptococcal or pneumococcal origin examine carefully the condition of the tonsils, washing out the crypts and treating with antiseptics. In recurring rheumatism or endocarditis and myocarditis, examine carefully, and if either or both tonsils are found in the slightest diseased or submerged or with history of cheesy concretions, advise operation.

Simple hypertrophied tonsils causing trouble only by their size can probably be removed by the guillotine, though even in these cases I practically always enucleate. As regards method of operation: That is a question for the individual operator. Cocain anesthesia is distinctly best and safest, but not always does it do away with all pain. I seize the tonsil in a suitable vulsellum and with either an angular dissector or curved scissor free the gland first above, then in front and behind, from soft palate and the pillars of the fauces. Then, drawing forcibly inward, I rapidly cut the entire organ from its bed from above downward. The test of the success of the work is finding the entire capsule of the gland removed, and a smooth hole where the tonsil was, free from any small adhering masses of lymphatic tissue which may afterwards develop.

Adrenalin, before applying the cocain, diminishes the hemorrhage somewhat, but this is usually very considerable and rapid work is required. The patient should be put at once to bed and perfect quiet is the best preventive against after bleeding. Should this occur, ice in the hole left by the operation is usually sufficient. If not a hypodermic of morphin has always answered. I have never yet required a clamp, but carry one for emergencies. The after soreness is not very extreme in this operation. In the cautery dissection which I formerly advocated as the only way possible to entirely remove the organ, the after pain was sometimes excessive, but I consider this unnecessary.

As this operation is now becoming common, we will soon have an opportunity to test the practical results. One object of this paper was to ask for histories of this kind for a fuller study. I should esteem it a personal favor to have any physician send to me such histories of general diseases from tonsillar infection and results after thorough enucleation, remembering always that mere tonsillotomy does not count. And it must also be borne in mind that what I have said regarding the faucial tonsils applies in somewhat less degree perhaps to adenoid growths.

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STUDIES IN CONTEMPORARY WORKMEN'S COMPENSATION FOR INDUSTRIAL INJURIES.

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THIRD PAPER.

In the present paper we will discuss certain of the every-day phases of the harshly legal methods by which American communities meet a situation which the Old World, for nearly a generation, has recognized to be altogether extra-judicial.[1]

X.

The American notion of compensation for industrial injuries is based altogether on the common-law rights of individuals. Even statutory enactments have as yet made scant inroads on the theory that obligation begins and ends with liability, and that the basis of all liability is negligence.

American law does not hold it to be one of the duties of the employer to guarantee or insure the safety of his workmen, or even to insure to the workman an invariably safe place in which he may work. Occupation is supposed to be inseparably associated with risk, and that risk, when unaccompanied by negligence of another, must be assumed by the person working at the industry. Nor does the common law exact of any industry—however profitable it may be to the principal—any pledge of compensation for injuries which its workers may sustain in consequence of these incidental risks, unless such injuries are the proximate[2] results of

1. Space will not permit of a discussion of other interesting aspects of this question, but a future paper will deal with various steps taken by private philanthropy, business sagacity, or speculative instinct toward providing the workman and his master with a measure of that insurance against the accidents of industry, which is denied them under the law of the land.

2. The law concerns itself only with proximate, or direct, cause and result. "Proximate Cause: That force or influence which in the order of causation is nearest to the effect or result under consideration, and is sufficient of itself to produce the result." Anderson's Law Dictionary.

negligence on the part of an employer, or of his vice-principal or other representative.

In two ways, therefore, does the legal situation of the injured workman in the United States differ, at the present time, fundamentally from that which he holds in twenty-three other industrial nations:

1. Our system rejects the doctrine of trade responsibility (insurance) for all industrial injuries; and

2. Adheres to the ancient common-law practice of making compensation for injury depend solely on the result of an inquiry into the source of negligence.

Under a strict interpretation of our unmodified common law the American workman goes uncompensated for his injury, unless he can prove that the negligence of his employer, or that of his employer's authorized representative, was its proximate and sole cause. *The burden of proof lies upon the workmen.*

We have already referred briefly to the injustice of these ancient doctrines of common law, and have shown that so far as the European industrial world is concerned, they have—happily—become things of the past. But—unhappily—we, in this country, are still living among conditions imposed by this law, and resulting from its operation; and it is purposed in the present paper to enquire why we still uniquely occupy that now obsolete position which was held by all industrial nations prior to 1884; to discuss the very present conditions under which we are now living, and such measures for temporary legal relief as have already become operative; and to outline the probable avenues along which we will eventually attain to a more far-reaching adjustment of our problems.

We cannot console ourselves for backwardness in this matter with the notion that either problem or conditions are unusual with us. On the contrary, we have not only our own experiences to guide us, but those of all other nations; for every phase of problem, conditions, results, even our own hitherto unsystematic and futile efforts at statutory escape, find ready parallels in European situations of the last thirty years.

Many causes are operating to produce and encourage this delayed development; to the more intimate and specific, we will recur later, and will consider at this point only those of a more general nature:

1. The Republican—and still less, the Federal—form of government does not lend itself naturally or readily to constructive law-making, either radical or systematic. Compromise legislation—the usual form in republics—is rarely radical and always dilatory, and systematic legislation is impossible when the units of government are as unstable as in systems like our own. We do not have to go beyond the limits of our present subject to find illustrations of these truths. The Swiss Federation has never been able to agree on any general workmen's compensation laws for Switzerland. The French Republic took eighteen years to enact a law, the final unsatisfactory nature of which is due almost entirely to the fact that it was based on a series of compromises. The English laws were delayed, and are admitted to have fallen far short of present perfection, because of changes in government and necessity for compromise between parties in power. On the other hand, in Germany, where the ruler has no hesitation

in saying *Suprema lex regis voluntas esto*,[3] and where the government is reasonably continuous, a radical and complicated revolution in industrial relations was completed, as originally planned, within four years of the announcement of the program by the Kaiser.

2. Certain factors, based largely on considerations of legal technic have, in the past, operated strongly among the members of our legal profession, leading them to throw their influence against any radical change in the legal and judicial systems established by our constitution and developed under our common law. These factors are: (a) Worship of the common law, and fear of changes in any of its essential features and routine, lest the spell of national prosperity be broken; still more, (b) The fear of statutory delimitation of individual rights; above all, (c) The jealousy with which our courts watch for encroachments of the legislative arm of the government beyond the limitations imposed upon it by our constitution.

Probably a large measure of the veneration in which the Anglo-Saxon and Norman common law is held by the average English and American[4] lawyer, finds its reason and justification in the fact that this great unwritten body of jurisprudence has been accumulating for generations as a bulwark for the protection of the individual. James Bryce has well said that the growth of the common law is coincident with, and dependent upon, the development of the notion of individualism, and that both are founded upon the theory that the individual is a center of legitimate force, entitled to existence and protection up to the limit where it impinges unduly upon other individual forces.

Many modern abuses, in the application both of the common law and of the so-called philosophy of individualism, are based on the fact that, whilst neither of these systems conceived originally of the individual except as a person—and so possessed of the usual personal and moral attributes—our American definition of the individual has, under the common law, become so broad that we must extend to any corporate body the protection and privileges which were originally intended for *persons* only. Whilst thus insisting on all the privileges conceded to the most favored private individual, the corporation, not content with part of the loaf, usually arrogates to itself also many of those public rights to which a private individual would never dare aspire. It has been well and recently said that this erroneous double view of corporations—both as private individuals by right of incorporation, and as public bodies by right of the use and concession of public privileges—with the long train of miscarried justice entailed thereby—flows not from our constitution, but from John Marshall's interpretation of it.

It is but natural that courts and lawyers should cling to a narrow and professional view of questions in which the law and its interpretation play such an important part; but until we, in this country, can regain that larger European viewpoint, which holds that the powers and rights of public corporations and concessions flow from the public and are in no sense inherent in these groups of individuals, and that public corporations must therefore respond to principles of law controlling not only public but also individual policy, we can hardly hope for any farreaching or systematic industrial legislation.

3. The inevitable and irrepressible conflict between Federal and state jurisdictions entailed by our complex form of government. That the obstacles interposed by this factor are not insuperable may be seen by a study of the German laws outlined in the second article of this series. In a future paper we will return to this aspect of our industrial dilemma.

3. William II.

4. In Louisiana alone is found another basis of procedure—the Civil Code of Napoleon. This in turn was based almost altogether upon the Roman law, which is the foundation of the codes of continental Europe.

XI.

Our investigation now leads us to an inquiry into the present status of the American workman, who, having sustained an industrial injury, seeks compensation from his employer on a basis of such civil rights as are his under either the common or the statutory law.

As we have already intimated, we need here only consider Negligence, both as the cause and the defense of the action; for, under our English law of Torts,[5] even violations of statutory enactments are usually nothing more than specific forms of Negligence; and this plea, or something like it, is the only possible one through which the injured workman may receive compensation for loss of time and stock-in-trade, or by which the employer may defend his financial resources from unjust assault.

Inasmuch, therefore, as the employer must defend himself against the charge of negligence of his duty toward his workmen, we may properly inquire:

1. *As to his duties*—(a) What are these duties under the common law? (b) To whom may they be delegated? (c) How has the statutory law, otherwise or more specifically, defined duties, fellow-servants and vice-principals?

2. *As to his defense under the common law*—(d) To what exemption is he entitled? (e) What restrictions are placed upon the workman? (f) What right under certain conditions has the employer to shift responsibility to other shoulders? (g) How have these rights and restrictions been modified by statute?

THE APPLICATION OF COMMON LAW TO INDUSTRIAL INJURIES.

Stated in all their bald medievalism, the various phases of the common-law doctrine of Torts, governing the *duties of the master* toward his servants, are somewhat as follows:

It is the duty of the master to furnish (only) reasonable protection to his servant while at work, and to give him the same ordinary (not extraordinary) protection that a prudent man would give himself. He is liable (only) for damage occasioned by his own act or omission, or by that of his representative, (only) when that act is the result of negligence. He should exercise reasonable (not unreasonable) care in hiring co-servants, in making repairs, in instituting safety devices, in making and enforcing rules, in giving instruction and warning relative to danger and increased hazard. He can make contracts either verbal, written or implied (unless prohibited by statute) with his workmen, releasing himself from liability for these hazards.

Volenti Non Fit Injuria.

The master is not liable for injury to his workman through defective machinery if the latter is aware of the defect, even though the master has himself been notified of the defect and refuses to remedy it; for the workman, as a prudent man, is under no obligation to continue to work after knowing of his danger, even though so ordered by the master. "The

5. Tort: A civil wrong (not based on contract) inflicting damage, for which there is a remedy in a court of common-law jurisdiction.

workman who has invited or consented to an act or condition cannot complain of it when he suffers from it."

Assumption of Risk.

Certain occupations are supposed to be associated with extraordinary risks, and those risks, both general and special, or the possibility of them, being known at the time of employment, are assumed by the workman, and the acceptance of employment constitutes an implied waiver of the right to recover for injury. It is assumed that extraordinary wages are paid for services accompanied by extra hazard.[6] The rule of law is that if one, fully cognizant of the risks of a particular service, voluntarily enters thereon, his undertaking of service is interpreted *as an assumption of those risks* and a waiver of any right to complain of an injury therefrom. (Bishop on Non-Contract Law, Sec. 675.) This common-law rule is supposed to embody what has been termed—with ghastly facetiousness—"labor's right to get killed." For all accidents not directly traceable to the employer's negligence, the workman must himself assume the risk. This includes not only all accidents the result of natural or of unforeseen causes, but also those which result from negligence of a fellow-servant.

Contributory Negligence.

If the workman who has been injured can be shown to have contributed in the least, by his own negligence, to the *proximate* (immediate, nearest) cause of the injury, he has no recourse against the master, whose remote negligence may represent 99 per cent. of its cause.

CASE.—A freight conductor in charge of a heavy fast train of 40 empty cars fell from his train at night, whilst hanging over to inspect a hot box. The train was going twenty miles an hour, and he fell across the rails of the opposite track, fracturing his spine. It was found that the fall was due to the giving way of the defective wood supporting a hand-hold. The case was taken from the jury and recovery was barred by the plea of Contributory Negligence, in that the train conductor's duty to inspect the fastening of grab-irons on all the cars in his train had been neglected. (Martin vs. Wabash Railroad, 142 Fed. Rep. 850.)

The doctrine of "Contributory Negligence," by which all Federal and state courts in this country govern themselves, unless expressly prohibited therefrom by statute, is this: "If an employee's fault, whether of omission or commission, has been the proximate (nearest) cause of his injury, then he is without remedy against the employer who is also in the wrong, for the reason that the employee's negligence has contributed most directly to the injury."[7]

Fellow-servants.

The common law regards as fellow-servants all men who are employed by the same master, and to whom authority has not been delegated, or who are not at the time of an accident in exercise of that authority.[8] The

6. This assumption never was true even when the common law was in its infancy, and is certainly not at the present day. The normal price of wages always follows Ricardo's law of supply and demand, and is based on the quantity, quality and supply of the labor, and not on danger or risk.

7. (Little vs. Hackett 116 U. S.—371, cited in Anderson's Law Dictionary—704.)

8. "Those engaged in the same pursuit, under the same general control." Cooley, Torts, 541.

"All who serve the same master, work under the same control, derive authority and compensation from the same common source, are engaged in the same general business, though it may be in different grades or departments of it, are fellow servants who take the risk of each other's negligence." Thomp. Negl. 1026.

common law definition of the word fellow-servant may include those who are not even employed in the same department, and who can have no direct knowledge of the presence, duties, or immediate dangers of one another.

The vagaries of American common law, as exemplified in the devious meanderings of the fellow-servant doctrine, find an edifying illustration in the various legal attitudes which the ubiquitous railroad gang-boss or section foreman is supposed to assume whilst carrying on his daily round of duties. If he orders his gang into a narrow cutting and they are thrown into space by a regular train of which he should have had knowledge, he is a vice-principal, and every one but the boss himself recovers damages. But if a wild engine runs by his flags and smashes things, the company pays nothing and the engineer takes to the woods, for the Federal Supreme Court held in 1893 that an engineer in charge of a wild engine was not a vice-principal, even though the company's rules made him under such conditions the equal of a conductor. If the boss takes a hand in the work himself, throws a tie down the embankment, and smashes the toe or cracks the shin of a section hand who talks too little English to get out of the way, they are co-employees, and no one is paid anything beyond a donation. Again, if he or his gang take up a rail and the same engineer with the wild engine goes into the ditch, the company repairs the track and the engine, but the engineer may have to repair himself and his feelings (unless the company's attorney settles the case, fearing the trial judge may hold heretical views and allow it to go to a jury), because a fellow-servant was the proximate cause of the accident.[9]

Right of Action.

Finally, under the common law, the workman may be barred, by virtue of his acceptance of a written *or implied contract* of employment, from bringing an action against his master for injuries resulting from that employment; and if an employee meets instant death in consequence of an accident occurring through even gross negligence of his employer, no civil action (for damages) can be maintained against the negligent employer by the personal representative of the deceased.[10]

We may sum up the most important principles of the unmodified common law applying to industrial injuries, as follows:

The employer has the right to exact from the workman, as a condition of, and preliminary to service, a written waiver of all future claims for damage arising through the former's anticipated negligence.

If the workman has, through negligence, *contributed proximately*—even though slightly—to the accident, he may not recover. Nor may he, if the accident was merely incidental to his known duties—*he assumed the risk*. Nor may he, if his employer was grossly negligent—he had the option of quitting the service—*volenti non fit injuria*. Nor may he, if a *fellow-servant* is to blame for the accident. Under certain conditions, the workman has not the same right to bring an action against his employer as would have been his had he not been an employee. Nor may his personal representative bring an action, if he was instantly killed.

9. I. C. R. R. Co. vs. Bents (Federal Circuit Court of Appeals, 6th Circ., 1900).

10. When the "Fathers of the Law" desired to perpetuate any especially medieval and unreasonable doctrine they were in the habit of crystallizing it into a Latin maxim. The above particularly choice fragment of legal inhumanity is embalmed as follows: *"actio personalis moritur cum persona."* This venerable doctrine—the reason for, and the history of which are lost in the dark ages of English jurisprudence—was the law of England until the passage of Lord Campbell's Act in 1846, which modified, but did not altogether abolish it. It received its *coup de grâce* in the Workmen's Compensation Act of 1897. The doctrine, however, still favors the common law of many American states.

In more than a third of the states of the Union, the unmodified common law, substantially as here stated, is still the law of the land.

HOW HAS THE COMMON LAW BEEN MODIFIED?

By an almost infinite variety of methods—just, unjust, spasmodic, impossible, well-meaning, but never uniform or systematic—have these crude, harsh and archaic attitudes of the common law been tempered and modernized in many of the American courts, by rulings or statutes, for the benefit of the workman. To be sure, our system still clings to negligence as the vital point in personal injury causes—for courts can hardly rise higher than the laws which exist as the fountain head of their inspiration—but in the following ways does the workman to-day find himself easily the gainer over his ancestor of a generation or two ago:

1. In nearly all states the *personal representative* of an instantly killed workman has received statutory permission to bring a suit for damages.

2. Many states have now passed laws specifically prohibiting the practice of executing preliminary "Death Warrants," by which the employee "trades his flesh and blood for a job," and in consideration of employment agrees to assume all risks arising through the negligence, known or unknown, of his employer or his employer's agent.

The following are the states, in the codes or constitutions of which are found laws expressly *forbidding* these *employers' exemption contracts:* New York, California, Colorado, Texas, Georgia, Indiana, Iowa, Massachusetts, Mississippi, Minnesota, Missouri, Montana, Nebraska, Nevada, North and South Dakota, South Carolina, Ohio, Oregon, Porto Rico, Florida, Virginia, Wyoming, and Wisconsin.

In the Federal courts prior to 1908, and in states like Illinois and Pennsylvania, where no prohibitory statute exists, such contracts are still valid, limited only by the provisions of Safety Appliance Acts,[11] or by the personal views or the established practice of the courts. In justice to the latter, it must be said that the majority of courts now regard these contracts with scant favor, and often accept them only in mitigation of minor forms of negligence or of grossly excessive verdicts.

3. Many states now give to the injured workman the same *right to sue* his employer that would be his were he not in his employer's service. This is the result of statutory enactments in Massachusetts, New York, Mississippi, Iowa and some other states. Elsewhere the right is now usually conceded, and the Federal Employer's Liability Act of 1908 gives the workman the same right in the Federal courts.

4. The courts have, in many instances, responded voluntarily to the popular protest by refusing to entertain the far-fetched pleas of *contributory negligence* and *assumed risk* often brought in by corporate defendants. A willingness has found its way, even into the higher courts, to hold that responsibility for unnecessary risk or divided negligence often rests more upon the employer than upon the workman, and to allow such questions of doubtful responsibility to go to a jury for decision.

The higher courts themselves do not undertake to interpret in concrete cases certain questions involving degrees of danger, and are very apt to remand on the point that the degree of known danger attendant on compliance with a vice-principal's order is a question of evidence; "it should be left to the determination of the jury to decide whether the danger attending a compliance with such an

11. Federal Safety Appliance Act, 1893, etc. See post.

order was such that an ordinarily prudent workman should have disobeyed it." Such a case is that of Schymanowski vs. Illinois Steel Company (162 Ill.—447):

A foreman ordered the plaintiff to go to work in a badly lighted place; the plaintiff demurred, calling attention to the bad light, but on the order being repeated—in scandalous language—he went in under protest, and, in spite of great caution, was injured. It was held that his protest, and the cautious manner in which he acted in obeying the reckless order, entitled him to damages. The court said: "A master is liable to a servant when he orders the latter to perform a dangerous work, unless the danger is so imminent that no man of ordinary prudence would incur it. Even if the servant has some knowledge of attendant danger, his right of recovery will not be defeated, if, in obeying the order, he acts with the degree of prudence which an ordinarily prudent man would exercise under the circumstances. The master and servant are not altogether upon a footing of equality; the primary duty of the latter is obedience, and he cannot be charged with negligence in obeying an order of the master unless he acts recklessly in so obeying. Whether he acted thus recklessly in obeying his master's order or whether he acted as a reasonably prudent person should act, are questions of fact to be determined by the jury."[12]

Whilst these individual rulings do not alter the general force and continued operation of the common law, where it is not formally restrained by statute, it is not difficult to see that the modern judicial tendency is distinctly away from enforcing it too rigidly by permitting either of these two pleas to hold an otherwise meritorious case away from a jury. Some courts hold that they can decide in favor of the plaintiff—in so far as allowing him to reach a jury—if the primary negligence of the employer was great and the proximate negligence of the workman small; and many courts now hold that if the workman has conducted himself like a prudent man, the defense of either contributory negligence or assumed risk will not bar his action, but will act—if proved—in mitigation of any damages awarded. In these rulings, however, justice—through the courts—still exercises her feminine privilege of remaining neither uniform nor consistent.

We may fairly epitomize the most rational opinions of those American courts, which are not under the control of statutes designed to instruct them as to contributory negligence and assumed risk, as follows:

If a workman has knowledge of defective appliances, and after failing to notify his employer, is injured thereby, he is guilty of contributory negligence and cannot recover. If a workman has knowledge of a defect of which his master has also been informed, and is thereafter injured thereby through continuing at his work, he may find that he has assumed the risk and may be refused compensation. Upon the latter hypothesis, however, many courts are more liberal, and are apt to be guided in their rulings by the circumstances of individual cases—hence the doctrine of *comparative* negligence. If a workman is injured through a defect of which neither he nor his master—although exercising due vigilance—has knowledge, he will probably find that he has assumed the risk and cannot recover.

Assumed risk and contributory negligence as defendant's pleas have recently received many radical statutory set-backs, altering very materially the legal standing of the injured workman:

12. In the office of the Presbyterian elder from which this action was defended, it was familiarly known—by one of those pleasing colloquialisms with which the legal mind occasionally relaxes itself—as the "s.... of a b..... case."

The Federal Employers' Liability Acts of 1906 and 1908 bar the employer from availing himself of the plea of contributory negligence, and also enable the workman to sue in spite of the employer's contention that the workman assumed the risk.

Similar laws were passed at about the same time by Iowa, Mississippi, Wisconsin, New York, Oklahoma, Oregon and Texas. Many of these state laws apply, unfortunately, only to railroads, although it is well known that many other occupations furnish a higher factor of danger than that of the railroad employee.

In the same Federal acts the principle of *comparative negligence,*[13] which was a feature of many judicial rulings in Illinois, Tennessee and Kansas during the past half-century, received recognition. This principle is said to have been first laid down in Illinois decisions, and to have subsequently become obsolete—possibly through the subtle influence of corporate persuasion not always or altogether of a legal nature,[14] combined with the undoubtedly correct argument that there is nothing in the common law to justify the exclusive punishment of one party for his share in a divided negligence. In its modernized and statutory form the principle recognizes that the employer has no right to sidestep responsibility for grave negligence, through the plea that minor negligence led the workman to walk into an open trap. Even when the workman is negligent, he should receive a warning of the negligence of others, and is still entitled to the "last clear chance" which ordinary humanity gives the individual who may be about to suffer from his own *proximate* neglect. This newer and more humane principle gives a mortal wound to a defense based on the old common-law doctrines of contributory negligence and proximate (and exclusive) cause. Where the principle of comparative negligence is adopted, it is usually with a distinct limiting clause that the defendant still has the right to plead contributory negligence, but only in *mitigation* of the damage assessed on account of his own larger offense.

Not only has comparative negligence become federal law in the Acts of 1906-1908, but the following states have also incorporated it into their statutes: Florida, 1906; Georgia, 1895; Maryland, 1888 (but only for coal miners); Nebraska, 1907; Nevada, 1905; North Dakota, 1907; Porto Rico, 1902; South Dakota, 1907; Wisconsin, 1907, so that this principle, which constitutes a very decided advance over the old common law, may be considered to have secured a permanent place in the American statute book. It should not be forgotten, however, that in states such as Illinois, where no statute exists, the old procedure is still in force, subject only to such modifications as may mercifully occur to the trial or appellate judge.

5. In many states the doctrine of *volenti non fit injuria* has been definitely abolished by statute. A previous knowledge by a workman of

13. This principle—derived from Admiralty law—was enunciated by Justice Breese of Illinois in 1858. The provision of the Federal Employers Liability Act, however, is said to have been derived from the Georgia Code.

14. As to the nature of some of these arguments, the following news item (Collier's) furnishes more than a hint:

"Milo Root as a Justice of the Supreme Court of Washington, filed an opinion in a case in which the plaintiff was a private citizen and the defendant was the Great Northern Railway. The opinion which Judge Root filed was written for him by M. J. Gordon, Spokane, attorney for the Great Northern Railway. Before being filed it was submitted to and approved by W. R. Begg, chief counsel for the railway at St. Paul. This episode, giving a new light on the range of corporate corruption, has aroused the State of Washington; beyond the boundaries of the State it has led the public to look with new care at the relations between corporations and Courts."

For many years charges of a similar character have been made concerning the relations existing between the Pennsylvania Railroad and the Pennsylvania courts.

a defect which ultimately causes him an injury is declared to be no bar to recovery in Ohio, Oregon, Iowa, Mississippi, Wisconsin, South Carolina, California, Nevada, Massachusetts (5-28-'09); and in New York proof of injury through an easily discoverable defect is *prima facie* evidence of the master's negligence. Mississippi went even farther in her low of 1906, which declared that proof of accident causing death on a railroad is *prima facie* evidence of negligence.[15]

In New York, Colorado and Texas, however, the law refuses indemnity to a workman injured through a defect of which he had previous knowledge, but of which he failed to notify his employers. In Iowa the notification, to be valid, must be in writing. In California the workman's knowledge of a defect is no bar to recovery, unless the risk is formally accepted; and in New York, Ohio and Oklahoma questions of assumption of risk, through continuance in service after knowledge of defects, are left to a jury.

The Illinois Safety-Appliance Act provides that knowledge of violation by his employer of its provisions does not bar the workman from recovery, if he is injured through such violation; but where not protected by the Safety-Appliance Act, the employee who is injured through machinery which he knows to be defective, *still assumes the risk, notwithstanding the negligence of the employer was gross.* Such provision exists also in all other Safety-Appliance Acts (Federal, 1893; Vermont, 1894; Nebraska and Wisconsin, 1907; Indiana, 1901; Ohio, 1902; Illinois, 1905; Massachusetts (last law), 1908).

6. The older definitions of *vice-principal* and *fellow-servant,* with the doctrines based thereon, have undergone radical remoulding both in rulings and statutes, enlarging the concept of the vice-principal and restricting that of the fellow-servant. While this remolding is unfortunately lacking in uniformity, it is not difficult to see that the tendency is altogether in the interest of the workman. Such recent changes have not altered so very materially our rational conception of the fundamental attributes of either vice-principal or fellow-servant, but have stripped from the definitions many specious disguises in which a complaisant judiciary has long allowed the subtlety of corporation lawyers to clothe them.

It may be conceded that all definitions of the vice-principal include "one to whom certain authority is delegated," and also that "those who perform the same duties, at the same time, in the same locality, under the same instruction," are always fellow-servants. But the complexities of modern industry on the one hand, and the pestiferous and one-sided ingenuity of modern attorneys on the other, have so completely fogged the middle ground lying between these two industrial strata that even the Supreme Court of the United States has allowed itself to be drawn into hopeless contradictions in deciding questions calling for rulings on these

15. The Mississippi law was evidently passed with the intention of throwing the burden of the proof of innocence upon the railroad.

definitions.[16] More than any other interpretation of doctrine controlling the adjudication of personal injury cases, the old definitions have been sustained, abolished, amplified, modified, complicated, befuddled and variously interpreted by federal and state courts and statutes. Hardly any two state courts are entirely in accord either with themselves, with each other, or with the federal courts, as to what is common employment; what constitutes any two men fellow-servants, co-employees, superior servants, superior agents, or vice-principals toward one another; when men's duties are, or are not, consociated—thus constituting them fellow-servants; or as to the *duality of service* of the humble section foreman; or, finally, as to how closely the men in two different departments may become associated, before they become fellow-servants, and assume the responsibility for negligence which a wider separation of the departments would have forced upon their employer. The importance of rational, definite and consistent rulings on these points is obvious, when we consider that often the only hope which an injured workman has of compensation, is in his ability to prove the author of his injury to be either some individual holding authority delegated by the master, or an employee of a department remote enough from his own to avoid the application of the fellow-servant doctrine.[17]

And yet the United States Supreme Court itself has said: "There is perhaps no matter upon which there is more completely confusing and irreconcilable division in the courts than the one as to what constitutes a test for common service, such as to relieve the master from liability for injury of one servant through negligence of another."[18] More recently the Federal courts (1907) have been inclined to brush aside many of the doctrinal technicalities surrounding these questions, and to decide them after a study of the *character of the act* in each case as it arises, and not as questions of department or rank. And yet this inclination is purely local, and possibly purely personal. For in studying the enormous and constantly increasing volume of litigation based on these points, it becomes evident that, instead of order and conclusive classification coming out of chaos, the divagations of the common law are becoming steadily more confounding; because this disgracefully undetermined margin of judicial

16. In 1884 the Supreme Court held that a conductor of a freight train was a vice-principal; in 1899 the same court held under the same conditions that the conductor was not a vice-principal. Again, in 1893, that the engineer of a solitary engine was not a vice-principal, although the company's rules made such an engineer coequal with a conductor.

Not to be behind the Federal Supreme Court, many of the state courts have ruled both ways in cases which, to the observer uninitiated in legal mysteries, seemed strikingly identical. For example, the Missouri Supreme Court held in 1892 that negligent performance of ordinary labor by a section foreman, which injured one of his gang, was negligence of the employer. The same court in 1904 held that such an official might serve legally in a dual capacity, acting at one time as an irresponsible fellow-servant, and at another, cloaking himself in all the authority and respectability of his master, as a vice-principal. Cases of this kind could be multiplied *ad nauseam*.

17. The application of the older doctrine of *respondeat superior*, which still rules in some measure in the local courts of Louisiana, would hardly "hold water" in courts like those of Illinois, or in the Federal courts, which are well saturated with the comprehensive fellow-servant doctrine of Abinger and Shaw. The Federal courts, for example, have repeatedly held that the engineer and the train dispatcher are fellow-servants. The extremes to which the judicial mind may go in this worship of the fellow-servant doctrine, is shown also in certain rulings of Eastern courts, in which it has been held that the superintedent or the general manager may be a fellow-servant, and that the power to hire or discharge other employes does not constitute a man a vice-principal (New York).

18. B. & O. R. R. vs. Baugh, 1893.

chance leads the workman and his attorney—who have nothing to lose—to gamble, in almost any case, on a hope of persuading a trial judge to permit their case to go to a jury.

Many attempts have been made by various states at statutory solution of these intolerably unjust disputes over the proper limitation of rank and responsibility, which are constantly arising to disturb the digestive harmony between the upper and lower judicial bowel. These statutes are neither uniform nor systematic, nor do they introduce any new or fundamental principle which might peacefully assimilate the entire situation. We seem to be swamped with law and rulings on law; until the only law which, to an outsider, would appear to be lacking is some general law to which the lesser laws have to conform, and which can serve—like Newtonian philosophy—to bring order out of the chaos of our legal system.

A minority of the states have as yet no statute to disturb the sway of the common-law doctrine of fellow-servant. So unjust has this seemed to the law-makers of certain more favored states that their statutes contain provisions that the "statutes and decisions of other states shall not be proved in defense against citizens injured in such other states,"[19] when the action is brought in the home state.

The vicious and timorous tendency of all American law toward indefinite generalization is shown in a large number of statutes attempting to define the fellow-servant.

Ex. gr. The Illinois law is this: "Where one servant is injured by the negligence of his fellow-servant, their duties being such as to bring them into habitual association, so that they may exercise a mutual influence upon each other promotive of proper caution, and the master is guilty of no negligence in employing the servant causing the injury, the master is not liable." Such a law is bound, after short operation, to bring the judiciary into discreditable conflict whilst endeavoring to decide as to consociation of duties in concrete cases.

The statutes of New York, Texas, Utah and Missouri are hardly more successful or specific than those of Illinois.

The California and Indiana laws define the classes of railroad employees more clearly, and the California law makes a railroad liable for the negligence of an employee in another department. This "departmental doctrine" is upheld also in Missouri, Virginia, Mississippi, South Carolina and Utah.

Some states, like Connecticut, make the employer liable for negligence of the vice-principal, but fail to define that agent.

South Carolina, Oregon, Ohio, New York, Pennsylvania, Missouri, Utah, and Mississippi define him more or less specifically, and the definition carries liability with it.

A large and constantly increasing group of states has boldly cut loose from any futile definition of the fellow-servant doctrine, by enacting laws specifying that the prudent workman may recover from the employer for negligence of any fellow-servant, either in his own or in any other department.

These states include Florida, Indiana, Minnesota, North Carolina, North Dakota, Oklahoma, Pennsylvania, Arkansas, Montana, Nebraska, Nevada, Texas, Kansas, Mississippi and Wisconsin.

In Iowa and Georgia the law applies to railroads only, and in Virginia only to co-employes in another department.

19. Indiana Session Laws, 1893, p. 294.

In Massachusetts the old law (1887) makes the employer liable for negligence of a co-employee in charge of signal, train, engine or device; in addition to being responsible for injuries due to the negligence of himself or his representative. The Massachusetts law of 1908 makes the master also liable for injuries due to negligence of *any* fellow-servant. In New York the law applies to the master or his "servant in control of men or devices" (1906). Although the recent Massachusetts and New York laws apply to railroads only, they probably represent the high-water mark of state legislation on this subject up to the present time.

The Federal Employers' Liability Act of 1908 makes no attempt to deal with this vexed question, so that in the Federal courts the old rule holds good, and the engineer and the train despatcher are still fellow-servants, provided the state law applicable to the case in question has not otherwise determined.

In the code of Louisiana alone do we find, unqualified by the fellow-servant rule, the original civil-law doctrine of *respondeat superior*, which was also English and American law in the simpler days before the decisions of Abinger and Shaw—and toward which, it will be noticed, our modern American statutes show a strongly favorable inclination after seventy years of common-law Philistinism. "The master is liable for damage caused either by himself or by his servants and overseers, in the exercise of their function." This doctrine was planted in Louisana—as in other Latin countries—with the principles of the old Code Napoleon, and applies not only to such damage as is done to outsiders, but also to such injuries as are sustained by the workman in consequence of engaging in his master's business. It may be well doubted whether our American law could do better than to return to this simple but comprehensive statement of the duty of the master toward his servant.[20]

XII.

If the reader, after considering these brief abstractions, in which the writer has endeavored to give the results of his investigation of the contemporary status of the injured workman under the American law, is inclined to feel bewildered and shocked, the effect will be an altogether salutary one; for until the general public can come to appreciate—we can hardly say understand—the injustices, both to the master and his workmen, which are constantly being wrought out under cover of the obscurities and contradictions of our present laws, there can be no such general movement toward effective reform as will be necessary to permanently cure the paresis from which the law courts are now suffering.

One might suppose that the remedy for such an admittedly chaotic situation, as exists to-day in all American courts deciding questions of workmen's injuries, would lie in some sort of broad, well-considered and reasonably uniform series of statutory definitions, in Federal and state law, of all these vexed industrial problems of fellow-servant, vice-princi-

20. Even Louisiana courts are now not entirely free from the taint of the fellow-servant doctrine (see Merrick's Rev. Civil Code of La., Vol. 2, Sec. 2320) since it has been repeatedly held that where the fellow-servant has been shown to be the *exclusive* cause of the injury, the Master was not liable. This, however, does not alter the fact of the general responsibility of the Master for trade accidents under the Civil Code.

pal, assumed risk, contributory and comparative negligence, *volenti non fit injuria, respondeat superior,* proximate cause, and other disputed points of a technical nature, which are constantly dragging the workers in the industrial world into civil courts which know little and care less about the technic of industry.

Such a constructive program, leading—at the least—eventually to a code of uniform industrial laws, with special and educated industrial courts for their interpretation, should not necessarily be impossible or Utopian, even under our present constitution. Among federated states, whose population, commerce, interests, form of government, are practically identical, the feasibility and advantage of such a code must be obvious enough. We have but to consider the table at the end of the second paper of this series to note the unanimity with which European governments, of diverse interests and widely variant structure and population, within the incredibly short period of twenty years, have not only defined and adopted the principles of *risques professionnel* and Compulsory Industrial Insurance, but, in order to accomplish this, have divested themselves of many of the older forms of law. Not only is this true, but the new statutes and forms adopted by the various governments conform so closely, in structural details and results achieved, to a common type, that their intelligent and philosophic study becomes an easy matter when the root-form is once mastered.

But it is in vain that we examine our statute books for any evidence of such orderly or concerted plan, either within any state or between any groups of states, in the evolution of legislation bearing on the accidental disabilities of workmen. The variety and confusion of our state laws and decisions would more than justify Voltaire's comment on the French laws of the eighteenth century—that he had to change laws about as often as his journey obliged him to change horses.

After a historical study of the systematic evolution, in foreign countries, of the movement toward rectification of these and other conditions of industrial injustice which are still unaltered in our own cradle of liberty, it becomes evident that several factors are everywhere essential to a successful solution of the problem. There must be:

1. Knowledge of, and interest in, the evils of the present situation by the general and industrial public, adequate to send to our legislative bodies a small but compact and representative party, organized solely on the platform of reform in industrial law. Such a party should preserve an autonomy independent of the other parties, and should secure legislation through a judicious use of the balance of power. This is European history.

2. A body of statistical data for the use of publicists and law-makers, should be secured through bureaus authorized to collect and publish such information. These bureaus are now maintained by the Federal government, and by the states of Wisconsin, Massachusetts and New York, and the writer takes this occasion to express his obligation to their publications. In several states the reporting of industrial and railroad accidents is already obligatory (Wisconsin, Massachusetts, and to the Federal Gov-

ernment through the Interstate Commerce Commission). The usefulness—necessity—of such sources of authorized statistics is also a matter of European history.

3. A body of law-makers, disinterested enough to escape local and corporate influence, and skillful enough in the practice of legislative technic to frame a series of *valid* measures which will adequately meet the present situation. In our second paper we have already referred to the usefulness of this permanent class of professional men among European law-makers.

That laws "which stay laws" are not easy to frame, may be seen by a partial enumeration of our own failures of the last few years:

(a) The Federal Employer's Liability Act of 1906, declared unconstitutional; corrected and now operative as the Employer's Liability Act of 1908.

(b) A complicated Federal Workmen's Compensation Act, introduced by Representative Sabath of Illinois, 1908. This bill sought to abolish ordinary negligence, and made employers liable for everything except the results of the workman's gross carelessness. An elaborate schedule of compensations accompanied the measure, with provisions for their enforcement. The bill died a well-merited death in the Committee on Judiciary after being printed.

(c) In 1902, Maryland passed an accident insurance law, exempting any employer from liability for injuries, provided he deposited with the Commissioner of Insurance—who thereupon became the arbiter of any claim subsequently arising—a sum sufficient to insure all of his workmen. This law was declared void because it gave a commissioner judicial power, and denied a plaintiff the right of trial by jury.

(d) In 1903 a Massachusetts commission, appointed by Governor Bates, and headed by Labor Commissioner Carroll D. Wright, with a wide and intimate knowledge of the local situation and after a prolonged study of conditions elsewhere, reported a very carefully prepared Workmen's Compensation Bill. The bill was unceremoniously smothered in a legislative committee.

(e) Massachusetts passed in May, 1908, a law allowing employers to make optional exemption contracts with workmen, in consideration of certain mutual insurance approved by the State Insurance Commissioners. No employer—after eighteen months—has availed himself of the provisions of this act.

(f) A similar bill was introduced in 1907-8 in Illinois, but failed of enactment.

This list of partial or total legislative failures is by no means complete, but it serves to demonstrate that law is less elastic than industry, and to illustrate the various stages of the thorny path which all industrial law must traverse before arriving at the assured dignity of appearing in two editions of a statute book.

With the private and political pitfalls prepared for bills which do not become laws, the average student of economics has little sympathy; but we owe a duty of encouragement and assistance to those law-makers who

are honestly seeking to recognize and overcome the legitimate difficulties in the way of preparing a law which will be effective, and which will at the same time escape fatal contact with constitutional barriers. Nor can we ignore the fact that these times are crucial for many aspects of the American Constitution itself, and for many state charters. It is a fair question whether, in the interest of the entire social and industrial economy of the nation, either the Federal or the state governments will not have to yield some measure of that legislative and executive autonomy, which the framers of our time-honored codes and constitutions thought was necessary to preserve the balance of power.

Whether in the ultimate working out of these reforms the end is to be reached:

1. Through cooperation of state and federal commissions;

2. Through constitutional amendments, bringing our state and federal charters down to date;

3. Through revision, unification, codification of our state and federal laws; or

4. Whether we are on the eve of working out the principles of compulsory insurance and professional risks by the technic adopted by some one of the European nations, it is not for the writer to say. But it is safe to express the conviction that legislators and lawyers must soon seriously open their minds to the knowledge that our country has now reached that historical position to which all nations in the past have inevitably come —where farther progress is hampered both by the decay of the old system of law, and by the confusion incident to the attempted application of old laws to new sets of principles and conditions.

PROPRIETARY MEDICINE PROPAGANDA.

If any of our members are still guilty of prescribing proprietary medicine, it would be well for them to read the following screed which is being published in every local paper in Illinois by the Lydia E. Pinkham Company. No stronger indictment of the proprietary medicine trust could be given than that found in these few lines: "The Value of Proprietary Medicines is proven by the very large percentage of physicians' prescriptions for the same remedies found in every drug store in America, but, as they are written in Latin, few patients realize this fact.

"The old standard proprietary medicines like Lydie E. Pinkham's Vegetable Compound, that have stood the test of time, deserve a place in every family medicine chest, and it is most certain they would not be prescribed by physicians if they were able to devise a formula equally as efficacious."

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DECEMBER, 1909.

COMPENSATION FOR INDUSTRIAL INJURIES.

The three articles upon "Compensation for Industrial Injuries" which Dr. W. H. Allport contributes to the current numbers of this journal have attracted wide attention, not only from the medical, but from the legal profession, and are not the less readable because a few heads are hit. We commend them also to would-be legislators. The subjects they discuss have received the thoughtful attention of many practical economists; but the great American public has been content to let this matter drift, not giving the subject that consideration which it warrants, except when some shocking calamity like that at Cherry brings it to their attention. Even then the consideration is spasmodic only, and the subject is soon forgotten.

These articles will make the reader think, and think hard, and, while they are perhaps a little severe on courts and ancient maxims of law, there is good backing for their criticisms in President Taft's recent Chicago speech very severely criticising other aspects of the same laws.

The first two articles are devoted to the European growth of the principle of compensation for workmen's injuries. A comparison of the

industrial protection afforded in Europe with that available in America is not favorable to our humanity, and exhibits an enlightened industrial policy in foreign nations which we cannot afford not to follow. Probably the best modern law from an American standpoint is the English Workmen's Compensation Act of 1906, which does not destroy existing legal remedies, but rather supplements them. The law is regarded with great favor in the United Kingdom, and is the latest exposition of English views on this subject. The English system, it will be noted, gives no recognition to compulsory insurance, and the future policy of our own nation or states thereon is merely problematic.

The question of compulsory insurance, as set forth so clearly and forcibly in these "Studies," is one that is receiving too little attention in this country. It is true that many employees' relief associations have been formed, but the agreements of employees to waive actions for damages, and accept in lieu thereof a certain insurance from such associations have not been received with favor by the courts, and many states have prohibited such action by statute.

It is well to consider that some of the difficulties surmounted under European laws could not, by reason of our constitutional safeguards, be easily met in this country, however desirable the result might be. For example: trial by jury has in European countries been largely abolished in industrial injury cases. Under our Constitution, while trial by jury can be waived, yet in most suits at common law either party has the right to demand a jury; and that a jury trial delays the rapid determination of suits, and gives more opportunities for reversible irregularities, is hardly to be disputed. It will also be noted that under European laws, excepting the English, special tribunals exist for the trial of industrial cases. This is hardly possible under our jurisprudence, although there would be authority and precedent for establishing separate courts dealing only with these questions as they develop interstate aspects. It is probable, however, that there would be no need of special tribunals.

The third article treats of the advance of laws looking to the protection of the workmen in this country, and of the tardy awakening of our Rip Van Winkle legislatures. The writer points out very clearly the development of this idea, which is especially apparent in our last Federal Liability Act. Under this Act, the doctrine of fellow-servant is practically abolished, and contributory negligence is no longer a defense, but is to be considered in mitigation of damages. Before this, however, we had the Safety Appliance Acts, which are accepted by all as humanitarian measures, indicating the trend in the direction of protective legislation. Many states are now also trying to pass employers' liability acts, following the federal model. As an example of freak legislation, the writer notes a most remarkable statute recently passed in Mississippi, which makes a *prima facie* case against a railroad, where any one, even a trespasser, is injured on a right of way.

The twilight zone between federal and state jurisdiction is often a difficult one to illuminate, but where both state and national governments enact employers' liability acts there should be no opportunity for refuge

in this zone. These laws, together with the Child Labor Laws, Factory Inspection Laws, and Hours of Employment Laws, all show to the thoughtful student that we are tending toward absolute liability on the part of the employer for workmen's injuries. And why not? A locomotive is destroyed in a collision; the loss is included in the operating expenses of the railroad; the company is entitled to earn a fair dividend, and hence the cost of this engine eventually comes from the public in the payment of rates. On the other hand, an engineer in the employ of the company is crippled in the same collision; why should not the railroad company repair him as best they can by the same automatic payment for his damages, with the amount charged off to operating expenses, and rates made to cover the same? The cost should, and does, come from the public in both instances; but in the last instance, and under existing conditions, only *via* a devious and expensive route.

If the time of absolute liability of the employer to his workingmen shall come—and articles like these will tend to bring it about—the amount of recovery should be fixed and paid into court, and the fee of the lawyer also be determined by the court; thus we will be relieved of the "contingent-fee lawyer," and the professional medical expert, neither of whom has added any luster either to the medical or legal profession.

The writer relegates to the junk heap the fellow-servant doctrine, assumed risk, contributory negligence, *volenti non fit injuria*, and other doctrines well known and established, though now somewhat disfigured by legislation and decision. Possibly the farmer, or other small employer, who thinks he selects competent servants and sends them into a field where one is injured by the carelessness of the other, may not be inclined to agree in the total abolition of the fellow-servant doctrine. A majority of our states have now abolished this doctrine as to employees of railroads, on the theory that railroading is an extra-hazardous business; and the courts have sustained this legislation altogether on the theory of classification of hazards. In Illinois the question of fellow-servant is usually one for a jury, and the average jury does not waste much time determining this point. Laws upon these subjects should be uniform in the various states. This can be accomplished only through cooperation of state and federal commissions, as suggested by the writer.

The writer takes a few pokes at corporation lawyers, but we are not convinced that the lawyer who gives his time to corporations is compelled to chloroform his conscience while he is so doing. The present administration at Washington took an eminent corporation lawyer as Secretary of War, another as Attorney-general, and another as Solicitor-general of the United States. Neither do we care to believe that corporation lawyers have any pull with any courts or judges.

These articles evidence great study and research; we have reason to know that the law is therein correctly stated and its consideration will be of great assistance to the student of live questions. They will be helpful to our medical public in directing their attention to the consideration of a great subject upon which radical legislation is bound to result within a few years.

DR. N. S. DAVIS AN ORIGINAL PROHIBITIONIST.

A writer in a recent issue of the Chicago *Tribune*, on the history of prohibition in Chicago, has the following statement regarding the attitude of Dr. Davis on this question: "A Democratic prohibitionist was an entirely unknown quantity in any political algebra. The only recorded instance was Dr. N. S. Davis, who was an outspoken advocate of both the principles of Jefferson and enforced teetotalism, and he stood so high, both professionally and personally, it was generally conceded he had earned the right to do as he pleased. No lesser man, however, could have taken so inconsistent a position and got away with it."

ILLINOIS AND "ROTTEN" MEDICAL EDUCATION.

The Southern Illinois Medical Society held its annual meeting in East St. Louis on November 4 and 5. The sessions were probably the most largely attended of any this society has ever held, and the program was of an exceptionally high and interesting order. Among other important actions of the society, the following resolution was unanimously adopted:

WHEREAS, It has been brought to the attention of the members of the Southern Illinois Medical Society from several sources that Illinois has become one of the "rotten spots" of the United States in medical education and medical licensure and,

WHEREAS, In former years the State of Illinois was ranked among the five highest in matters of medical education and medical licensure, and

WHEREAS, The Southern Illinois Medical Society has always been on record as demanding a high standard of medical education and of admission to practice: Therefore, be it

Resolved, That the Southern Illinois Medical Society without prejudice toward our Board of Health, but solely for the information of its members and other physicians interested, do hereby request the Secretary of the Illinois State Board of Health to explain through the official *Bulletin* of the Board or through the columns of the ILLINOIS MEDICAL JOURNAL why Illinois should bear the stigma of being one of the plague spots of this country in medical education, medical examination and medical licensure.

We wish to take this opportunity to say that the columns of the ILLINOIS MEDICAL JOURNAL are open for the discussion of this important question, and we hope the Secretary of the Illinois State Board of Health will avail himself of them to explain to the profession of the state the causes which have conspired to give our fair state its very undesirable position and reputation in medical education, medical licensure and medical practice.

ILLINOIS MEDICAL DIRECTORY.

The American Medical Association is preparing to issue a medical directory of the State of Illinois based on the matter contained in the second edition of the American Medical Directory, with corrections and

additions bringing it up to date, and making it a complete directory of the medical profession and medical affairs for the state. Beside all the matter contained in the Illinois portion of the American Medical Directory, the book will contain the names of the section officers and standing committees of the Illinois Medical Society, as well as the names of the officers, members of the council, standing committees and boards of the Chicago Medical Society and of the district branches of that body. It will also contain the office and residence telephone numbers of all Chicago physicians. The Illinois State Medical Society has ordered a sufficient number of copies of this book to supply each member of the state society with a complimentary copy, which will be sent him without cost as one of the privileges of membership in the state society. These copies of the directory are supplied to the society at cost, and are for the exclusive use of the members. Cloth-bound copies will be sold to non-members and business houses desiring them at $2.00 each. It is, therefore, important, under the circumstances, that the members of the Illinois State Society do not violate the privileges of membership given them by allowing these complimentary copies to go out of their hands. All members of the state society are, therefore, especially requested not to give away or sell the copies of the Illinois State Directory which they will receive.

THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Last month the now venerable College of Physicians of Philadelphia dedicated a new home with great pomp and ceremony, during which honorary membership was granted to a number of physicians from other cities, among them Dr. Frank Billings, of Chicago.

This organization has had a long and honorable career and undoubtedly has had much to do with maintaining the high standard of professional conduct which has always prevailed in the City of Brotherly Love.

In probably no other community in America has the medical profession been so highly esteemed as in Philadelphia, where the term physician and surgeon has always stood for gentleman and scholar.

The library and museum of the college are of immense value and world renowned. The beautiful building which has been erected for the use of the college represents a large sum of money, much of which was given by non-professional men who took delight in honoring an organization of this character.

In 1787, when the college had its origin, Philadelphia was already one hundred years old, had about 40,000 inhabitants, and the entire wealth of the city was probably much less than that represented in many of the smaller cities in Illinois to-day. For many years the college was hampered for funds, but it kept up an organization and finally the day of deliverance from poverty was at hand, and from that time forward it has had an increasing influence on the professional life of the city.

Our object in calling attention to the college at this time is to emphasize the importance of an organization in our smaller cities, the main-

tenance of a high standard of professional ethics and the formation of a library and museum which might be made of great value not only to the profession, but to the citizens in general.

An honorable medical organization anywhere maintaining a high standard of excellence and freedom from party bickerings can and will receive eventually the support from the general public to which it is entitled. On the other hand, a medical society, great or small, that fails to respond to its possibilities and busies itself with the petty things of life brings discredit on the profession it is supposed to represent.

We hope that this lesson will be appreciated by our county societies and that they will profit by the history of the College of Physicians of Philadelphia.

Correspondence.

A WORKING KNOWLEDGE OF SIMPLE REFRACTION.

DETROIT, MICH., Nov. 12, 1909.

To the Editor:—At the late meeting of the Ophthalmic Section, A. M. A. (eleven hundred members), the undersigned were appointed a committee to promote *a working knowledge of simple refraction* among family physicians. It has secured abundant evidence that such knowledge has been acquired and is now used by many physicians, so proving that all medical men can do likewise, if they so desire. But that the practice may become uniform, it is necessary that the State Boards of Registration require it for license and medical colleges teach it in course.

Recognizing its importance, the Michigan State Board of Registration, on Feb. 12, 1909, notified medical colleges that thereafter it would grant licenses to practice only to such applicants as demonstrated, on a living subject, with simple spherical lenses and test types, their working knowledge of simple refraction. Your committee is confident that every State Board of Registration would make a like requirement if it grasped the situation; and then all medical colleges would qualify their students therefor. Recalling the fact that our system of medical education makes no adequate provision for training the family physician in simple refraction, and that it be impossible for experts to meet the needs of all the people in this respect, it is plain that this class of cases had no source of relief other than the optician. But if the State Boards require a working knowledge of simple refraction for license, the needs of all the people will be fully met by qualified physicians, and the optician resume his normal vocation as a spectacle merchant.

Recognizing your great influence in medical affairs, and assuming your vital interest in enlarging the field of family practice, your committee confidently ask your active endeavor to persuade your "State Board of Registration" to require "a working knowledge of Simple Refraction"

from each applicant for license. Each member of your committee stands ready to assist you to a fuller understanding of the situation, or to cooperate with you in seeking its relief. With thanks for your aid and a report of your success, we remain sincerely yours,

LEARTUS CONNOR, Detroit, Mich., Chairman.
A. R. BAKER, Cleveland, Ohio.
J. THORINGTON, Philadelphia, Pa.

ARMY MEDICAL CORPS EXAMINATIONS AT WASHINGTON, CHICAGO AND SAN FRANCISCO.

The Surgeon General of the Army announces that the War Department has appointed permanent boards for the preliminary examination of applicants for appointment in the Medical Corps of the Army to meet in Washington, D. C., Fort Sheridan (near Chicago), Ill., and San Francisco, Cal., in addition to the usual preliminary examination boards that are assembled at various Army posts throughout the United States from time to time. The permanent boards will hold sessions on the second Monday of each month.

A limited number of successful candidates will be appointed first lieutenants in the Medical Reserve Corps (salary $2,000 per annum) and assigned to Army posts until the next session of the Army Medical School, when they will be ordered to attend the school as "student candidates."

Applicants must be citizens of the United States, between 22 and 30 years of age, graduates of reputable medical schools, of good moral character and habits, and shall have had a year's hospital training after graduation, or its equivalent.

Full information concerning the examination can be procured upon application to the "Surgeon General, U. S. Army, Washington, D. C."

NECESSITY FOR ORGANIZATION: COMMITTEE REPORT.

While specific features of the duties of this committee have for reasons of expediency been assigned to special committees, nevertheless the public relations committee is held responsible by the society for all matters of public policy and legislation having a sanitary, hygienic or other medical relation. The enormity of the task before us necessitates the strictest cooperation of the entire profession with the work of the public relations and organization committees.

That feature of the public relations committee work alone which has to do with the state legislature is found to be a very strenuous one, especially during legislative sessions, as was well illustrated in the Forty-sixth General Assembly, when an attempt was made by the solons at Springfield to pass a special medical act, sectarian in nature, the object of which was to secure the right to practice medicine by certain cults at a standard of preliminary and medical education lower than those already in the field, under the pretext that its followers are not practicing medicine. The public relations committee held, and their position was approved by the council of the society, that regardless of the methods or limitations of

treatment employed, practitioners are alike and that they must make diagnoses, must differentiate between health and disease. To treat a disease without knowing what it is, is merely guess work, a dangerous procedure and an imposition on the patient. For these reasons there should be one standard set for all practitioners of medicine, regardless of the methods of treatment. Any one complying with that standard shall be granted a license to practice by whatever method he chooses.

The fight made by the society against the passage of these vicious measures was the most Herculean task ever undertaken by this organization along legislative lines. Powerful political and financial influences, together with chicanery and perfect team work, were all operating to enact these measures into law, and it was only by a last supreme effort, by a semi-organized profession, that we were able to prevent the measures from being placed on the statute books.

Our recent experience is an indication of what confronts us at future sessions of the legislature, and we should begin to organize now for the fight that is bound to come. Great care is needed at the present moment in selecting your committee and sub-committeemen, for active and enthusiastic men for the work is much more essential to successful legislative work than enthusiasm aroused at the last hour to do work which should have been accomplished weeks before. It is really more harmful to have a member on a committee who is expected to do certain work and does not, than to have no man at all; therefore, in organizing for the coming year, only those members who are willing to do the work, and incur the sacrifice necessary, should be selected on committeeships.

The practice of illegitimate medicine was never more active than at present, and unless we are energetic at the polls and in the legislative halls as are the exponents of quackery, we must expect to suffer defeat at their hands. We leave the law-making to the politicians, most of whom care nothing for us. We allow ourselves to be duped and imposed upon on every side with the most idiotic complacency. But we have nobody to blame but ourselves, for we can right these wrongs just as soon as we will pull together for that purpose. "Many a shameless bit of medical jobbery is smuggled into law simply because the men with power hear only the quacks' side and not a word is uttered by us. The profession by such silence is not only renegade to its humanitarian function, but it is renegade to its own interests." Periodic paroxysms of perverted oratory and spasmodic attacks of strenuous travail has never yet accomplished useful results. We may resolve and memorialize until the end of time, but unless we put some force behind the memorial, we shall continue to be treated with the paltry consideration we have always received.

Shall we allow such abuses to continue forever? It is noteworthy that physicians are beginning to realize as never before the benefits of organization, not only to individual members, but also to the medical profession in its complex relations. The profession is becoming aroused to the necessity of organizing for something more than purely scientific purposes. This is true not only in the United States, but in the Old World. The beneficent influence of such organization is its power to stimulate men to work. The major portion of important and far-reaching constructive work by members of the medical profession is performed

under this stimulus. To belong to the city, county or state society, then, is, of course, a necessity at the present day, for by organization the profession gains added weight, influence, dignity and honor.

All medical men should be thoroughly acquainted with their rights, privileges and power for safe-guarding their own vital interests, as well as the interests of the community. It is the duty of every one of us to fit himself for the great constructive epoch on hand. No one thing promises greater and more widespread gain to the profession than the fact that from one end of the country to the other leading physicians are actively entering the political arena and are becoming interested in civic problems. We sincerely hope for more active participation in public affairs on the part of Chicago physicians.

It is well that we should from time to time call the bosses to account; in other words, we should teach them that it is not good politics to scorn the medical profession, and that we consider it good politics and good medicine to punish those who vote against the express desire of their medical constituents. A candidate for election is more amenable to reason and proper argument before election than after, and we recommend that the committee on organization perfect its organization so that when the policy and legislation of this society shall have been decided, the conclusions can be readily communicated to each member and by him presented to the various candidates for Senate and House, and pledges of support secured.

There is no denying the fact that an organized medical profession comprising 11,000 members, as we have in Illinois, can accomplish any worthy purpose it sets out to achieve. A united medical profession in this state would be a force which, if properly used at the psychologic time, would make good to put any just law it wanted on the statute books, as well as defeat any attempt to pass vicious legislation.

Other problems of vital importance confront us. There is no denying the fact that the legitimate practice of medicine in the United States has fallen on perilous times. This is not the cry of "wolf, wolf," but is evidenced by the writings of eminent men and by the unrest and agitation of the medical profession the world over, whether the present condition is due to the various new cults and pathies, or because sanitation and preventive medicine are reducing disease to a negligible quantity, or the abuse of medical charity as practiced in our hospitals and dispensaries is chiefly to blame or the unhealthy increase in the number of doctors is a factor, but whatever the cause, every physician should look the situation squarely in the face.

Within the last year you had presented to you figures calling your attention to the enormity of the abuse of medical charity, a condition which was found little short of disgraceful. You were shown by figures that the abuse has grown here to such enormous proportions that estimated in currency it amounts to a great many millions annually; a critical situation not confined to Chicago, but recognized as a burning question the world over. In the old world it has become a veritable curse to the profession. In many parts of the Austrian, German and British empires it has become necessary for the profession to organize into med-

ical protective leagues in sheer defense of their means of existence. In our country similar conditions are being rapidly brought about, as shown by the formation of such organizations in New York, Philadelphia and elsewhere.

The work done the last year by the Chicago Medical Society, through its committees on abuse of medical charity and contract practice, which allowed of full discussion of its various phases, was most praiseworthy, and we hope it will be the nucleus of a great campaign on medical economics. Let us get together, present a more tangible brotherhood, or the common foes of legitimate medicine, ignorance, charlatanry and faddism will invade in still greater hordes the field that rightfully belongs to us.

A little more confidence and respect for ourselves and our calling; a little more tolerance for our fellow-workers and a recognition of this all-important fact, that the public will trust and respect us only to the extent to which we trust and respect ourselves; this is the secret of a new era of professional prosperity.

CHARLES J. WHALEN, M.D.,
Chairman of Public Relations Committee.

SHALL THE OLD OFFENDERS BE ADMITTED? NO.

CAMARGO, ILL., Oct. 27, 1909.

To the Editor:—In your October issue, page 444, you say, "The question is, is it wise to try to reform some of these old offenders by getting them to join the society and then trying to show them the error of their way, or shall we ignore them entirely?"

You answer this in the affirmative, "and there is where we mix." If a man graduates in medicine and thereby receives the amount of culture that ought to be an incentive to high and noble purposes, and then so prostitutes his attainments as to be guilty of "gross violations of the code," I am in favor of him "bringing forth fruits meet for repentance" before his name is placed alongside those of men who have been pursuing an honorable and upright life.

He must renounce his false gods and swear eternal allegiance to the true spirit of medicine, else his armamentarium for doing evil and practicing quackery has been greatly strengthened. This is made all the more apparent if you will remember some of the papers read at the last state meeting, where "Legitimate Advertising" was endorsed, leaving the deciding as to what constituted legitimate advertising solely to the advertiser, I suppose.

No, we do not want to become water-logged with repentant quacks. They must not only receive a good Methodist sprinkling, as an outward sign of an inward grace, but have a complete immersion in the pure crystal fountain of Medical Ethics, and though their sins may have been scarlet, they must be washed white as snow. Then we will receive them into full membership, and all go forward and take them by the hand, and wish them God-speed and hope they will locate as far as possible from us. Yours fraternally, W. A. WISEMAN.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY.

The Adams County Medical Society met October 11 in the Elks club rooms. In the absence of the president and first vice-president, Dr. Knox, the second vice-president, called the meeting to order. Those present were Drs. Williams, W. W. and J. G., Nickerson, Rice, Ashton, Shepherd, Whitlock, Lierle, Wessels, Brenner, J. B. and Kirk Shawgo, Gabriel, Knox, Gilliland, Werner, Christie and Wells. Also Dr. Green, of Quincy, and Dr. J. L. Wiggins, of East St. Louis. No quorum being had before luncheon, immediately thereafter the society was called to order, the usual order of business set aside, and Dr. J. L. Wiggins, president of the Illinois State Medical Society, was introduced and took for his theme "Exact versus Surgical Diagnosis in Operative Procedures." The paper was one of profit because of Dr. Wiggins' large and varied experience and was warmly received. Since the doctor's train left at a very early hour, no time was afforded for discussions and questions. By a unanimous rising vote the thanks of the society were tendered the speaker, and by motion Dr. Wiggins was enrolled among the distinguished men who are now honorary members of the Adams county branch. Miss Irene Griswold, Quincy's efficient visiting nurse, was presented to the society and made a pleasing talk on her work and the need of help, cooperation and assistance from the physicians of Adams county. Mrs. W. P. Ringland, late head nurse of Blessing Hospital, but now in the visiting nurse work in Chicago, also addressed the society along the same lines.

Adjourned.

CLARENCE A. WELLS, Secretary.

CENTRAL ILLINOIS DISTRICT MEDICAL SOCIETY.

The thirty-sixth semi-annual meeting of the Central Illinois District Medical Society was held Tuesday, Oct. 26, 1909, in the Woodmen's Hall at Pana. The following program was given: President's address, Dr. Don West Deal, of Springfield; subject not announced, Dr. Will C. Wood, Decatur; discussion opened by Dr. G. J. Rivard, of Assumption. "Puerperal Fever," Dr. W. J. Eddy, Shelbyville; discussion opened by Dr. J. Huber, Pana. "Experience in Obstetrical Work," Dr. J. J. Conner, Pana; discussion opened by Dr. J. N. Nelms, Taylorville.

COLES COUNTY.

The Coles County Medical Society met at Mattoon, Oct. 19, 1909, at the Public Library at 8 p. m. Dr. Wiggins was with the society and gave a good paper. The following program was carried out in full: "Artificial Feeding of Infants," Dr. W. J. Carter. Discussion by Drs. Vanatta, A. T. Summers and Bennett. "Surgical Diseases of the Abdomen in Children," Dr. J. T. Montgomery, followed by a discussion. "Exact vs. Surgical Diagnosis Governing Operation Procedures," Dr. J. L. Wiggins, President Illinois State Medical Society, East St. Louis.

R. H. CRAIG, Secretary.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

A regular meeting was held Oct. 13, 1909, with the president, John A. Robison, in the chair. The subject for the evening was a "Symposium on Fractures." Papers were presented as follows: "Diagnosis," by William Fuller;

"Pathologic Fractures and the Treatment of Non-United and Badly United and Suppurating Fractures," by Carl Beck.

Abstract: Fracture of bones is a symptom of several pathologic conditions, among them metastatic tumors, fibrosis and cystic degeneration. There are some cases of unexplained genuine fragility. Two cases of fragility of bones with fractures are described and a number of skiagraphs taken at different stages of the disease are shown. The disease treated with hypodermic injection of adrenalin, with cure resulting. Remarks on pathology and experiments of Rossi. Demonstration of patient.

"Ambulatory and Open Treatment," by William Schroeder; "The Treatment of Compound Fracture," by Edward H. Ochsner.

Abstract: The subject is discussed under: 1. First aid. 2. Avoiding amputation whenever possible. 3. Prevention of septic infection. 4. Prevention of tetanus. 5. Drainage. 6. Description of retention dressing. 7. What simple fractures is it desirable to deliberately make compound and treat by open suture.

Discussion opened by William E. Morgan, S. C. Plummer, A. E. Halstead, and E. W. Andrews. The following demonstrations were given: "*X*-Ray Plates of Fractures," by P. S. O'Donnell; "Noguchi Method, Using Human Amboceptor," by Thomas L. Dagg.

Regular Meeting, October 20, 1909.

A clinical meeting was held Oct. 20, 1909, with the following cases reported: By A. D. Bevan, 1. "Sacrococcygeal Tumor."

Abstract: Tumors of this type bear out Cohnheim's theory and are due to development of embryonal rests at the caudal end.

2. "Carcinoma of the Larynx."

Abstract: Operated on six years ago without any recurrence. The man speaks remarkably well, can be heard in any ordinary room, and he does this without any larynx and without any communication between the mouth cavity and the respiratory tract.

Discussion of the subject of carcinoma of the larynx, the very good prospect of permanent cure from early operation and the very excellent condition in which the patient is left without a larynx, both from the standpoint of general comfort and his ability to talk.

3. "Ulcer of the Stomach, Simulating Hour-Glass Stomach."

Abstract: Woman had lost 45 pounds and could swallow only small amounts of fluid without regurgitation. Just after swallowing bismuth in water an *x*-ray picture was taken showing retention at the lower end of esophagus. Another taken 20 minutes later showed the stomach divided into two pouches; operation showed mucous membrane of stomach only contracted, the muscular and peritoneal coats being normal. Patient made good recovery after operation similar to Heinecke-Mikulicz.

4. A young man with history of an ulcer over a year before presented the same peculiarity on *x*-ray examination. Operation disclosed a constriction one and one-half inch from the pylorus that hardly admitted the little finger.

By E. A. Fischkin, 1. "A Rare Case of Urticaria Pigmentosa (Xanthelasmoidea)."

Abstract: Child 18 months old. The eruption covers the entire body, most abundant on face, neck and extremities, consisting of closely set nodules of distinct yellow color, resembling a xanthoma. The disease commenced in the first three months of life.

2. Two cases of Lupus Erythematosus.

Abstract: Face and scalp showing the effect of Finsen light and of carbon dioxid snow treatment.

By Julius Grinker: 1. Tumor in Region of Hypophysis.

Abstract: Face and scalp showing the effect of Finsen light and of carbon dioxid developed headache and blurred vision in April, 1909. For one year previous he showed tendency to somnolence and occasionally saw black spots before his eyes. Examination reveals bitemporal hemiopia and slight acromegalic enlargement of skull. The radiogram shows considerable widening of the sella turcica.

2. Case of Progressive Muscular Dystrophy. Type: Pseudohypertrophic muscular atrophy.

Abstract: Boy, aged 5, negative family and personal history. Walked at 1 year, but unlike other children. Though always somewhat clumsy in his gait, he is now unable to walk up a flight of stairs, owing to weakness of the muscles of the back and lower extremities. Shoulder-girdle considerably below normal, but posterior leg-muscles appear firm and hypertrophied.

By Charles M. Jacobs—1. Cases of Torticollis.

Abstract: Before and after operation. Deformity post-operative.

2. Lumbar Pott's Disease.

Abstract: With beginning psoas abscess and spasm of the psoas muscle.

Regular Meeting, October 27, 1909.

A regular meeting was held Oct. 27, 1909, the subject being a "Symposium on Brain Tumor." The following papers were presented: "Diagnosis, Symptomatology and Differential Diagnosis," by William G. Spiller, Philadelphia, Pa. "The Surgery of Brain Tumor," by Harvey Cushing, Baltimore, Md. The following demonstrations were given:

"Anatomic Preparations Showing the Various Steps in Brain Surgery and Brain Localization," by W. J. Marvel.

Abstract: The cross-bow incision for exposing subtentorial region for tumors of the cerebellum and cerebello-pontine angle. The lateral reflection of skin and muscle flaps—the bilateral opening of skull, allowing cerebellar dislocation of the normal lobe during manipulation of the other. Specimens demonstrating operations in this as well as in the temporal and frontal regions.

"Roentgenography of Intracranial Tumors."—Max Reichmann.

Abstract: Shows hardened brain with epidural tumor roentgenographed within and without the calvarium.

Dr. P. S. O'Donnell presented plates illustrative of the subject.

Regular Meeting, November 3, 1909.

The meeting of November 3 was a "Symposium on Tuberculosis." The following papers were read: "The Early Diagnosis of Tuberculosis," by W. A. Evans.

Abstract: Discussed the necessity of early diagnosis so that the patient could have benefit of early treatment and cure with less expense and time. Patients now go back and forth between private and institution care. Only 38.7 per cent. of the patients dying this year in Chicago were reported while living, and these were in all stages of the disease, the majority advanced. It is common information that tuberculosis is not diagnosed as early as it should be. The diagnostic use of tuberculin is far more accurate than the average diagnostic procedure and its harmful results few as compared with the thousands dying for lack of early diagnosis.

Regular Meeting, November 10, 1909.

The meeting of Nov. 10 was a symposium on "Pure Foods." The following papers were read: "The New Pure Food Catsup; or, When Is a Chemical Not a Chemical?" by John A. Wesener.

Abstract: Review of preservation of foods. Smoke, salt, saltpetre, sugar, vinegar, spices, etc.

Catsup. History and general method of preparation. New method by the use of benzoate and benzoic acid. The new pure food catsup, preserved by the use of essential oils, fluid extract of capsicum, excess of vinegar, or by the use of excess of spices. Discussion of three ways of preserving catsup: 1. By the excess of spices. 2. By benzoate of soda and benzoic acid. 3. By essential oils, excess of vinegar and fluid extract of capsicum. Chemistry and preserving action of benzoate, benzoic acid, essential oils, vinegar, capsicum and sugar. Wide distribution of benzoate and benzoic acid. Wholesomeness of catsup preserved by benzoate and benzoic acid.

Can inferiority and deception be practiced by the use of benzoate of soda and benzoic acid; or can such inferiority and deception be disguised by the use of essential oils, excess of vinegar and fluid extract of capsicum?

CONCLUSIONS

1. Benzoate and benzoic acid are medicinally less active than the others used in the preservation of food.
2. By the use of these the flavor of the article preserved is not lost.
3. Flavor produced by vinegar and spices is wholly artificial and does not retain much of the actual flavor of the product that is preserved.
4. Changed conditions in economics have made it imperative for the manufacturer to prepare his food to reach the consumer in a sweet, wholesome and palatable state.

"The Preservation of Meats by Cold Storage," H. S. Grindley, University of Illinois. "Foods from Corn," Theodore B. Wagner, Chicago. "The Enactment

of Food Laws; Their Enforcement and Effect," Thomas Lannen, Chicago. "Bleached Flour," George L. Teller.

Abstract: The wheat berry; method of converting it into flour and feed; brief outline of composition of different parts of the grain.

Different grades of flour from the same wheat; why they differ in composition and bread-making qualities.

The coloring matter of wheat flour; where found; has no food value; how removed from the flour.

Bleaching process; how accomplished; the mechanics and something of its chemistry.

Residue from the bleaching operation; minute in quantity, substantially all removed, during process of bread making; in no way injurious to the bread-making qualities or to its value as an article of food.

Brief outline of contentions made against bleached flour and fallacy of arguments made in same.

Advantages of bleaching. Removes objectionable color. Assists in keeping flours uniform. Increases the value of wheats otherwise objectionable because of excess of yellow which they contain.

Blending of wheats and its relation to the bleaching of flour.

Summary and conclusions.

Demonstration: "Various Tests for Milk, Human and Bovine" (Apparatus and Technic), Adolph Gehrmann.

NOTE—Discussion on Symposium general and voluntary.

Regular Meeting, November 17, 1909.

The meeting of November 17 was a symposium on "Exophthalmic Goiter;" the following papers were read: "Medical Aspect," by M. M. Portis.

Abstract: Dietetic measures based on the chemistry of the bowel: Hydrotherapy and electrotherapy. Drugs—the old and the new. Serotherapy.

"Pathologic Aspect," by Dean D. Lewis.

"Surgical Aspect," by Alexander Hugh Ferguson.

Abstract: The desirability of early operation in all cases of exophthalmic goiter, except in acute cases, when suitable preparatory treatment should be instituted. The low operative mortality and the excellent result accruing from surgical treatment, makes it the only rational procedure in these cases. Results are apparent within a few days after operation and are lasting in most cases. It is important, however, that the operation should be performed by a surgeon who has a large experience in this line of work. Most of the bad results occur in the work of the inexperienced operator. A wide range of management of cases before operation is a desideratum. The operative procedures that have been found reliable were presented.

Demonstration: "Microscopic and Macroscopic Sections of the Eye," by L. N. Grosvenor.

Abstract: Demonstration of a large number of macroscopic specimens of animal eyes, and various pathologic lesions of the human eye. Microscopic sections of animal eyes, showing variations from human eye. Normal human eye. Pathologic lesions of the human eye. Intraocular tumors—carcinoma, sarcoma, glioma. Perforations of cornea due to foreign bodies and ulcers; many other lesions.

CHICAGO MEDICAL SOCIETY—ENGLEWOOD BRANCH.

Regular Meeting, Oct. 5, 1909.

The Englewood Branch held its regular monthly meeting on Tuesday evening, Oct. 5, 1909, at the Englewood Hospital. Dr. J. P. Webster presented a patient, a colored boy, aged 12 years, who had fallen on an electric wire of high voltage, causing such severe burns of the left arm as to necessitate a scapulo-humeral amputation, extensive and deep burns on the abdomen and destruction of penis and scrotum. The burns on the abdomen, extending nearly through to the peritoneum, healed after a long and tedious course of treatment. An attempt was made to save one of the testicles, but it was so badly damaged that it became necessary to remove it, and later an external urethrotomy was performed on account of the contraction of the periurethral tissue in the stump of the penis. At the present time the boy is in excellent condition, with complete healing of all involved tissues. Dr. V. D. Lespinasse presented two cases of vascular naevi in infants which he had treated by the use of carbon dioxid snow. Dr. J. C. Hepburn presented a patient in which he had excised the lower lip for epithelioma and a patient with rodent ulcer of eyelids in which he had done a radical

operation, with enucleation of the eye, opening and curetting the frontal sinus. No return of disease after four months. The following program was then given: The president, Dr. M. W. Bacon, delivered an address. Dr. G. J. Hagens read a paper on "Puerperal Infection." Discussion was led by Dr. J. G. Campbell. The secretary addressed some "Historical Remarks" to the society. Seventy-six men were present and many availed themselves of the opportunity of discussing the subject of the meeting. Meeting adjourned, after which a light buffet lunch was served. This was one of the largest and one of the most enthusiastic meetings the branch has ever held. C. HUBART LOVEWELL, Secretary.

A RETROSPECT.

M. W. BACON, PRESIDENT ENGLEWOOD BRANCH, CHICAGO MEDICAL SOCIETY.

To Fellow Members of the Englewood Branch of the Chicago Medical Society:

In casting about for some subject which might be of interest to you as well as voice my appreciation of the honor which you have conferred upon me in electing me as chairman for the ensuing year, it occurred to me that a brief retrospect of the past thirty-five years might be instructive as well as interesting to the members here this evening. Thirty-five years ago the University of Michigan was a well established school of instruction, standing well in the front ranks of medical colleges. Yet a brief enumeration of the advantages then offered to students compared to the modernly equipped college, with its immense hospital facilities, makes it seem like the little old backwoods country school-house as compared with the great universities of the present day.

The teaching was practically didactic. A small country town with no hospital except a few rooms on one edge of the campus, the clinical material was necessarily scarce. During my whole college course I could count on the fingers of one hand all the major surgical operations I saw; this was before the days of asepsis or antisepsis. The year following my graduation Lister proved to the world that cleanliness, wound cleanliness, would prevent suppuration. The operating was all done in the main amphitheatre, the surgeon in his ordinary clothes would shove his sleeves above his cuffs and proceed with the operation, if any scrubbing was done it was before he appeared in the amphitheatre. I remember it was the boast of his admirers that he could do any operation without soiling his cuffs with any blood stains. Abdominal operations and plastic reparative surgery were practically unknown and not attempted. Obstetrics was taught by charts and the manikin and during my college years I never saw one demonstration of actual obstetrics. Gynecology as a science was unknown, and what little was taught came from the chair of obstetrics. Orthopedic and eye surgery seemed far in advance of general surgery. I saw many operations on clubfeet with good and perfect results. In the removal of cataract and correction of squint I have seen none of the present day that could excel our operator of that time. Reductions of fractures and dislocations I believe also would compare well with the present time. Bacteriology was not taught, as at that time no bacilli had been demonstrated except the anthrax bacillus.

Going back to the year 1875, when I was thrown onto the unsuspecting public as fully equipped with medical and surgical lore, it would seem that this year marks the era of the beginning of great discoveries in the bacteriologic world. Running rapidly down the successive years from Lister's great discovery of asepsis and antisepsis, we note the discovery of the micro-organisms of leprosy, gonorrhea, typhoid, chicken cholera, pneumonia, tuberculosis, glanders, diphtheria, tetanus, influenza and bubonic plague, and Behring's serum therapy by antitoxins. Countless experiments are still going on so at the present time we breathe, eat, drink and feel a continuous atmosphere of microbes, a nightmare, as it were, of bacilli. In the good old times we only knew of one bacillus and we did not care much for that. Chemistry was taught, an abbreviated course compulsory, and a more extended course at the discretion of the student. It is fair to state,

however, that many students of that day availed themselves of all the facilities offered. Our teacher in materia medica also held the chair of physiology and was a teacher of unusual ability and thoroughness. To this day I can distinctly recall many of his lectures on both subjects. Theory and practice of medicine to which was added what was known at that time of neurology, physical diagnosis and pathology, was handed to us in very good form by Professor Palmer, that positive and staunch old Englishman. His teaching in the main was good; many things, of course, are now supplanted by the newer and more accurate methods of determining the causation of disease and appropriate treatment.

Anatomy as taught by that grand old teacher, Prof. Corydon L. Ford, is one of the most pleasant dreams of my student days. His flow of precise and beautiful language held his audience enthralled. The silence in every part of the great amphitheater during his lecture hour was absolute. I wish to call attention here to the fact that during his earlier years at the University of Michigan he enjoyed the reputation of being a surgeon of exceeding skill and finished technic. I well remember his relating to the class the history of a patient on whom he had operated many years before. A lady in child-birth had suffered a severe injury which left her in a most deplorable condition, with a complete perineal laceration complicated by a large vesico-vaginal fistula. By two operations he was fortunate enough to restore her to a condition of perfect function. Gentlemen, when we consider that this must have been done more than fifty years ago, way back before any attempt at or knowledge of asepsis or antisepsis, it was a surgical triumph calling for the highest measure of praise. Not having the exact data, I do not know whether this antedated the first successful case reported by J. Marion Sims or not. To be an anatomist surpassed by none and equalled by few is honor and fame enough to satisfy any one, and long may his memory remain is the heartfelt wish of the writer.

To the younger members of the profession: I would ask the comparison of advantages offered to students of my day and the world of opportunities presented to the student to-day. If you are not wise it is your fault and not lack of facilities for acquiring knowledge.

If my hearers will bear with me I wish to go just a little more into retrospect. A careful study of the program offered to this society for the past year calls for more than passing mention; the varied and wide range of subjects so ably presented would almost make it seem that the harvest was over and that we who are now attempting to fill their places need only to reach out and gather the rich and ripened golden sheaves of knowledge contained in the many able papers presented to this society during the past twelve months. But, gentlemen, the march is onward, not backward, and I ask each and every one of you to put *your* shoulder to the wheel and help us to make this year one to be long remembered as one of good fellowship, scientific advancement and acquirement of knowledge to prevent and combat disease in all its forms and phases. To the retiring president and his valuable aids too high praise cannot be given for their energetic and valuable labors. To my golf loving friends I would say: "May your drives be long and true and may you each and every one land on the fair greens, keep out of the rough and avoid trouble."

PUERPERAL INFECTION

G. J. Hagens, M.D., Chicago.

Puerperal infection is probably the most universally accepted term now used to express all forms of infection during or in connection with the puerperium or childbirth period. It has reference to those infections that enter by way of the female genital tract as well as those that enter the system extragenitally. Infections associated with child-birth were known one thousand years B. C., and probably have existed as long as child-birth. Hippocrates, the father of medicine, wrote of it and spoke of its occurrence in epidemic form 500 years B. C. It has been manifest throughout all time even until the present day. It was the most

dreaded scourge of the obstetricians and midwives before the antiseptic days of Lister, when it made visitations in the form of frightful epidemics, the mortality being as high as 20 per cent. in some of the lying-in hospitals, so that these institutions were looked upon as a public menace and steps were taken to close them.

Semmelweis, in 1847, while interne in the Vienna Lying-in Hospital, deeply impressed and chagrined at their high rate of mortality as compared with the much lower rate outside of the hospital, began an investigation into the cause and was himself convinced that it was due to contact infection brought to the patients by those who attended them. By instituting a system of cleanliness and antiseptics (chlorin water) he was enabled to reduce their mortality from 10 to 15 per cent. down to about 1 per cent. Marvelous as this improvement was, his views were not accepted by the medical profession until about 1870, when Lister announced his application of Pasteur's discoveries in bacteriology to the treatment of wounds. Until then Semmelweis' labors and teachings as well as those of our own Dr. Oliver Wendell Holmes, who had taught prevention of child-bed fever in 1843, were not recognized nor appreciated.

It was from about 1880 until 1900 that the bacteriologic causes of puerperal infection were worked out most definitely and classified. With recognition of bacteriology as the basis for the pathology of the puerperium, the obstetric art was placed on a plane with modern surgery, requiring for its best results the highest kind of surgical skill with a complete and consistent technique. More vigilant than that of ordinary surgery because always dealing with an environment that does not allow of an absolutely aseptic field for operation. More vigilant because of an ever present portal of entry for infection, the placental site. Puerperal infection is always exogenous in origin, never from within the individual herself; though there are good authorities (Alfeld and Kaltenbach) who believe that infection may originate from within. But these few instances could better be classed as indirect infections that have gained access to the system at some previous time of the individual's life from without. The micro-organisms did not originate spontaneously within the woman's body. Of the germs that cause puerperal fever, the streptococcus heads the list as the most fatal, first recognized in about 1865 in the tissues of fatal septic cases, and first cultivated by Pasteur in 1880 from cases of puerperal infections. The *Bacillus coli communis* is probably more often present in cases of infection than is generally supposed, owing to the close proximity to the anal region.

The nurse cannot be too scrupulous in the preparation of a case for confinement and should be mindful of this ever-present source of infection. This is all the more urgent since it is claimed that when the colon bacillus infection is added to a streptococcus infection, the result is much more virulent. The *Staphylococcus aureus* appears to be the only organism of the staphylococcus family that is of consequence in puerperal infection, first recognized about 1880 (Doleris) and definitely classified in 1894, about the time that the importance of the *colon bacillus* was recognized. At about this time we were taught to make vaginal examinations under cover by stroking the index finger over the perineum before its entrance into the vagina, a very efficient method of carrying them toward a dangerous field. This practice is not uncommon by the thoughtless even to-day.

The gonococcus plays an important part in puerperal infections. It was so recognized in 1893 (Kroenig). It usually causes a mild form of infection that tends to a spontaneous recovery, yet fatal cases have been observed. That diphtheria sometimes is the causative factor has been demonstrated. The false membranes seen in the genital tract are, however, mostly caused by other micro-organisms and represent a necrotic slough. The gas bacillus of Welch (1900) is also a recognized cause of puerperal infection. A form of infection called sapremia is said to be due to the invasion of the uterus by putrefactive organisms mostly of an anaerobic nature and the organisms that produce the putrid ill-smelling copious vaginal discharge which by many is associated with a serious infection calling for vigorous antiseptic treatment, whereas the reverse is more often true.

The most serious infections, such as the streptococcus or staphylococcus, unless mixed with putrefactive organisms, have no oder to the discharge or lochia. I

recall a case in this hospital at full term, with death of infant five days prior to delivery, during which time the amniotic fluid came away and became very putrid and profuse, but the patient's condition remained normal and no treatment of any importance was instituted except external cleanliness. On the fifth day she was delivered of a macerated dead fetus and she made a splendid recovery. I had two similar cases since treated by non-interference and both made perfect recoveries. I believe those cases are often over-treated by too much manipulation and undue interference.

The pathologic lesions following puerperal infections may vary from a mild local superficial infection to the most virulent and rapidly fatal septicemia depending on different factors in an individual case. Taken collectively, it may be said to depend upon the balance of power between the invader and the individual attacked. It may take the form of a vulvovaginitis, which often is present from a prior gonorrheal infection, or an endometritis, which is the most common form in which the infection manifests itself.

This may be confined to the placental site or the entire endometrium may be involved. If a sufficient defense is set up by the leucocytes in the uterine tissues we may have no further manifestation beyond the initial chill and fever, with or without a putrid odor, according to the micro-organisms present, or this process may extend and be followed by a metritis, metrolymphangitis, metrophlebitis, parametritis, peritonitis (local or general) pyemia, salpingitis, oophoritis, pelvic thrombosis or a phlegmasia alba dolens, each with its train of symptoms added to those of the original. Endometritis or any one or more of these may follow an infection of a lesion of the genital tract without first producing any local manifestation at the point of entry. The streptococcic and staphylococcic infections have very little or no odor to the lochia except when the infection is admixed with some of the putrefactive organisms. I recall a case of rapidly fatal general peritonitis with septic thrombophlebitis, the only one of its kind I have ever had in my practice. The patient, a multipara living in very insanitary surroundings, unwilling to go to a hospital, was seen by me a few days prior to her confinement. When first seen in labor the infant's head was on the perineum under pressure of expulsive labor pains. It was soon delivered normally followed by the placenta in a short time, no lacerations of the genital tract anywhere. No examinations were called for nor made. Nothing about the house was used except boiled water with lysol, absorbent cotton and gauze in original packages as they came from the drug store. The patient had a chill, a rise of temperature and pulse on the third day, followed by symptoms of a general infection. The lochia ceased entirely; abdomen was immensely distended; no mammary secretion; lower limbs very edematous, discolored and covered with large blebs filled with bloody serum. She manifested no pain whatever except on palpation of abdomen. The pulse was small, thready, weak and compressible. Mind was clear to the end; no sleep whatever. She died on the sixth or seventh day. The infection usually travels along the lymphatics when it goes beyond the uterus into the cellular tissues and beyond to the peritoneum, to become localized or generalized, as the case may be. When the thrombi at the placental site become infected a phlebitis is set up in the uterine wall or beyond in the pelvic veins. This may become so extensive as to involve the inferior vena cava as far up as the renal veins, blocking the veins of the lower extremities, causing phlegmasia alba dolens. When the infected thrombi break down the particles of infected material circulate with the blood current and cause metastatic septic processes or pyemia.

Infections of the mammary gland head the list of the infections in connection with the puerperium not gaining their entrance into the system through the female genital tract. It occurs in about 4 per cent. of all cases. According to Winckel, 67.5 per cent. of cases occur in primipara, due, as I believe, to too frequent and prolonged efforts at nursing before the mammary secretion has begun on the third or fourth day. In primipara the integument about the nipples has not as yet become thickened and toughened by former nursing. More attention to this would prevent many cases of fissured nipples and subsequent suffering and infection. When it occurs in more than 1 per cent. of cases it may justly be charged to carelessness

on the part of attendants. Infection through fissures of the nipples is usually of a phelgmonous nature. It starts with light chills, a rise of temperature and pulse and local pain. This may all subside in one or two days with proper care, but if it extends over more than two or three days it almost invariably results in suppuration. When the infection travels along the lactiferous ducts the process is of a glandular character. Only one lobe may be involved when an early incision may terminate the infection, but if neglected the entire breast may become involved or a post-mammary abscess may be formed with destruction of a large portion of the gland. All cases of mammary infection should be put at perfect rest at once by a proper bandage and as soon as fluctuation can be recognized the abscess should be incised under general anesthesia. The incisions should radiate from the nipple and should be outside of the alveola to avoid the lactiferous ducts and avoid a scar near the nipple which often draws the nipple in at that point.

Infection from the intestinal tract is frequent enough during the puerperium to be of importance. If often causes a high temperature from autointoxication which subsides when the bowels are well cleared. It appears that in some patients the bowels have not been cleared for days or weeks before confinement, although they give a history of a daily bowel movement. One patient had a chill and rise of temperature at the end of the second day which subsided after a full dose of castor-oil and an evacuation containing a small teacupful of blackberry seeds, the last of which she had eaten three weeks before. Another patient who had severe chills followed by a temperature of 104 and high pulse proved negative in every respect except pain over the lower left abdomen on deep pressure. In a few days all subsided and she passed a quantity of exudate much like wet brown paper. This probably was due to a sigmoiditis that had lit up during confinement. We may observe symptoms of a cystitis, pyelitis or pyelonephritis. We had a patient in this hospital who had light chills followed by a rise of temperature to 103.8 on two successive days in whom everything proved negative until we found the urine contained many casts and a large amount of albumin and pus cells. All this cleared up before she left the hospital. This may have existed before confinement and became aggravated during labor. Edgar states that of a large series of cases with a rise of temperature to 100.5 or over in the puerperium 79.5 per cent. were due to other causes than septic infection. In 13.5 per cent. it was due to septic infection; in 6.9 per cent. it was due to unassignable causes. Williams states that there are some isolated cases of fatal infection reported of which the organisms have not yet been identified or classified. The treatment of puerperal infection resolves itself into a rigid system of prophylaxis before, during and after confinecent, so long as the lying-in period may last. The two principles of prevention are: 1. Prevent as far as possible any lesion of the genital tract. 2. Prevent the infection of any lesion that is unavoidable, bearing in mind the ever present placental site. The requirements for sterilization are: 1. Sterilize the field of operation, that is, the patient. 2. Sterilize all that comes in contact with this field, that is, the doctor's hands, nurse's hands, and all that may be brought in contact. 3. Remove all unnecessaries from the lying-in room; sterilize the room and all that is needed within it.

The most practical way in which this can be accomplished (and I believe the time will come in all large cities) is to have well regulated modern lying-in hospitals where all maternity cases must go and where they will go as readily as they now go for an operation for appendicitis. When we consider that the statistics from some of the leading civilized countries of the world have within recent years reported the highest mortality from puerperal infection among women between the ages of 20 and 40 years of age, barring but one disease, tuberculosis; that the mortality rate is about 7 per cent. between these ages from this preventable disease; that the mortality rate outside of the well regulated hospitals has improved but little since the preantiseptic days and the morbidity is no better; it must make us realize there is yet something to be done in the way of prophylaxis in the obstetric art. We now know that by rigid asepsis and antisepsis the mortality can be reduced to less than 1 per cent. Again, when we see the utter indifference shown by some who attend obstetric cases with regard

to modern asepsis and even ordinary cleanliness in the management of a case, it is remarkable that their cases escape infection at all. But here again comes in that wonderful power of vital resistance in the patient upon which so many depend without any license thereto. Yet this vital resistance must be a great factor and always has been to ward off infection in all surgical cases of whatever kind. I believe that with modern research work preoccupying the minds of original workers and the profession as a means of prevention of puerperal fever, this phase of the problem has in a measure been overlooked. We all know that a certain type of people resist infection better than others. It is this type of women that society should aim to produce for the future motherhood of the world. The most essential function of a nation is to perpetuate itself. This cannot be done during one puerperium or even a number of them, but it takes a guarded life time of the individual along proper lines of living. In some families it will take generations to obtain the desired results. The laity has yet much to learn of the requirements for good obstetrics. But the doctors and nurses need it first. If they have been well enough educated they should not be negligent and careless or fail in their duty to their patient. No doctor or nurse who dislikes confinement cases has any place in that branch of medicine. One who assumes the care and repsonsibility of an obstetric case must be willing to sacrifice personal comfort and convenience oftentimes in order to give the patient the best that the obstetrics art can afford. Our vigilance should not cease at the end of the third stage of labor or even before, as is sometimes done, but it should continue throughout the entire puerperium. During this time nothing whatever that is unsterile should come in contact with the nipples, breast, genitals or any dressings thereon. No good surgeon would ever think of disregarding this rule. In fact, no one can practice clean obstetrics unless he carries in mind good modern surgical principles to guide him all the time.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

A regular meeting was held May 11, 1909, at Michael Reese Hospital, with the president, Henry Gradle, in the chair.

I. RADIOGRAMS OF THE MASTOID REGION AND THE INTERPRETATION OF THE SAME.[1] II. INTERPRETATION OF THE RADIOGRAMS OF THE NOSE AND ITS ACCESSORY SINUSES.

Dr. Joseph C. Beck:—Last year I presented to this society a number of radiograms of the nasal accessory sinuses of normal and pathologic subjects, giving the technic of taking such radiograms. At that time I gave notice of experimenting with taking pictures of the mastoid, which I take pleasure in presenting to-night. The secretary requested that we give the technic and interpret the plates.

My conclusions are based on three years' experience and 463 heads of patients in my private practice, on such conditions of the nose, its accessory sinuses, the ears, mastoid process and lateral sinus that by the aid of the radiogram could clear up the diagnosis. We have in these transilluminating boxes about fifteen *x*-ray plates of sinuses taken in the antero-posterior and lateral positions, and as many of the mastoid region, which we will demonstrate to you after I have thrown a few characteristic reproductions of these plates on the screen, interpreting various lines and formations. These lantern slides are far inferior in demonstrating the value of the *x*-ray plate, besides it requires considerable time and experience to enable one to discern the finer points. Only after comparing one plate with another can one form definite conclusions. The same difficulty in demonstration is experienced in the reproduction of *x*-ray plates for publication, as they usually lose so much in details that one who is unaccustomed to looking at such pictures can make very little out of them. It is necessary to use heavy glazed paper and extreme care in the production of the cuts.

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1. An atlas of radiograms of the nasal accessory sinuses and mastoid region, especially stereoscopic views with complete description of the technic employed, is in preparation for publication.

PLATE 1.—Skull taken in antero-posterior position shows the following: 1. Nasal cavity divided by the septum, middle and inferior turbinated bodies. 2. Orbits with a horizontal curvilinear line through their upper one-third and the line representing the horizontal plate of the frontal bone. The importance of this line in this position was first brought out by Killian and Goodman, later by Coakley and Caldwell, and means that when we find it thus situated the picture was taken at the right angle, and the reproduction of the structures are of natural size and form. 3. Frontal sinuses. These are distinctly outlined as are also their septa. No matter how pathologically changed a sinus is, one can usually make out these lines or boundaries of the sinuses. 4. Ethmoid cells. A sharp curved line in front represents the posterior border of the lachrymal bone, and behind them into the inner surface of the orbit can be seen the ethmoid cells frequently subdivided by partitions. In many instances, as in the skull, two or more most anterior ethmoid cells reach down over the upper inner corner of the antrum of Highmore. If the head is tilted slightly, either in a faulty position or as one does in a stereoscopic picture, one obtains a very large reproduction of one side of the ethmoid cells. 5. Antrum of Highmore. These cavities are reproduced the poorest, because they are quite a distance from the plate and so many lines are seen running across it that the image is blurred. One can see that these cavities are triangular in shape with the base upward as far as the intra-orbital margin and in most of the cases the apex pointing downwards lower than the floor of the nose. The three borders, namely, the superior, internal, and external, can be distinctly outlined. The external border has a good portion of the cavity shadowed by the malar bone. Another shadow is from the lower margin of the occipital bone, and a third from the external plates of the pterygoid processes of the sphenoid, when these are large as they are in this skull.

PLATE 2.—Skull taken in lateral position for sinuses. 1. In the first place, it shows the frontal sinuses superimposed showing the height and depth with the floor of the sinuses. It clearly demonstrates the space one has in entering the frontal sinus by way of the nasal cavity. This width varies so much that one cannot, without the aid of lateral picture, determine it for operation, unless it be by a stereoscopic antero-posterior exposure, and I will speak of this procedure later. 2. The anterior ethmoidal cells are seen more extensively and one can make out where the posterior ethmoidal cells usually begin. The one difficulty again is in the fact of the superimposition of the two sides, and therefore it is not of much clinical value. 3. The sphenoidal sinuses are, in most of the cases, easy of demonstration. One will first locate the sella turcica with the anterior and posterior clinoid processes, and right below it are the sphenoidal sinuses. This varies a great deal in its size and form. 4. The antra cannot be outlined in lateral view except in front one can see the lower anterior margin where the pyriform fossa is formed. 5. The nasal bones are seen as short projections as in most plates the soft structures do not show, and to one not accustomed to examining these plates the conditions will look abnormal. 6. The region of the temporal bone in this position is of no practical value in examining the mastoid, etc. We have to take the picture in the inclined lateral position.

PLATES 3, 4, 5, 6, 7.—Normal heads; antero-posterior positions, showing different shapes and sizes of the sinuses.

PLATES 8, 9, 10.—Lateral position, showing different sizes and shapes of the frontal sinuses and size of the naso frontal ducts.

PLATES 11, 12.—Antero-posterior position of child and adult heads, showing the absence of frontal sinuses.

PLATES 13, 14.—Lateral position of the same child and adult heads, showing the absence of frontal sinuses. The adult had pus from the left nostril and severe frontal pain, repeatedly operated on intranasally, but did not get well. Four years ago I attempted an external frontal sinus operation, found no frontal sinus, closed and subsequently took the *x*-ray picture, which I should have done before operating, and found the absence of both frontal sinuses.

PLATES 15, 16.—Acute frontal ethmoidal and antral infection on one side only. Clearly showing the shadow of these cavities.

PLATES 17, 18.—Same cases one month later after simple local treatment had been employed, recovered and showing much clearer spaces, but are not completely cleared up, although there are no symptoms.

PLATE 19.—Acute antrum infection of dental origin; dull antrum.

PLATE 20.—Same case after dental treatment, removal of tooth caries; cleared up.

PLATE 21.—Chronic left frontal, ethmoidal and antral sinusitis. Marked dulness on that side.

PLATE 22.—Same patient one year later; middle turbinectomy and ethmoid currettement, frontal, antral and ethmoidal regions are much clearer, but not completely cleared up, although the patient has no objective nor subjective symptoms.

PLATES 23, 24.—Luetic necrosis with marked external nasal deformity as a saddle nose and the tip is markedly drawn inwards. One observes the absence of the bony structures forming the pyriform fossæ, the entire septum, turbinates and nasal bones. The frontal and ethmoidal sinuses are absent or completely obliterated, the antra are cloudy. The mastoid, although taken in the wrong angle, shows absence of any cells as also show the tips in the antero-posterior exposure.

PLATE 25.—Chronic double frontal, unilateral ethmoidal and antral infection. An artificial plate shows very distinctly. It is made of vulcanized rubber.

PLATE 26.—Shows a normal case, pins holding artificial teeth to a plate made of dental wax, which does not show in an *x*-ray plate.

PLATE 27.—Chronic pansinusitis, especially of the frontal sinuses.

PLATE 28.—Same case after performing an external plastic frontal sinus operation by my method, as described in the *Journal of the American Medical Association*. It shows the broken septum of the frontal sinus, but the persistence of the general cavity. Patient after one year has no symptoms of his former trouble.

PLATE 29.—Double chronic frontal sinusitis operated on by external method, removing the entire bony covering of the frontal sinuses and making a large opening into the nose without going through the nasal process of the superior-maxilla or taking off the floor of the frontal sinus. After thorough removal of the diseased structure the cavity was filled with bismuth paste No. 3, consisting of bismuth, vaselin, wax and paraffin, and the flap brought over and sutured. The case recovered very rapidly and it is now eight months since the operation and the case has remained well. The radiogram shows the condition seven weeks after operation, a small portion of the paste still remaining. A radiogram taken later shows all the bismuth paste absorbed.

PLATE 30.—Skull taken in the incline lateral position for demonstration of the middle ear, mastoid process and sinus (lateral). One will observe the complete outline of the middle ear and mastoid cells. Since the soft structures, as well as ossicles, are absent in the skull, one can see the solid portion of the cochlea, two distinct half circles. The mastoid cells are seen distinctly separated from one another by their partition. The one large cell close to the canal is the antrum, the largest cell aside from the one mentioned appearing at the apex or tip of the mastoid. The limits of the mastoid region can be made out clearly; cells reaching far over into the zygomatic root, high up into the squamous portion and far back over the occipital region can often be made out. I would like to mention at this point the very recent work of Hakase Dr. H. E. Kanasugi, who has made a study of four thousand cadaver heads to determine certain anatomic facts in relation to the mastoid process. He has made a number of radiograms of these heads to determine these facts: 1. We have two distinct varieties of mastoid process; diploic (small mastoids) in which scarcely a cell can be found; pneumatic (large mastoid) in which are large and numerous cells. 2. The location of the lateral

sinus in relation to the posterior wall of the auditory canal. In the large pneumatic mastoid the sinus was located quite a distance from the posterior canal wall, whereas in the diploic it is very close to it.

This is a fact of considerable importance. Of course, we have known this clinically for a long time, but not all small mastoids are diploic or all large ones pneumatic. Therefore the use of the *x-ray* is of great value. The lateral sinus is seen in the skull very clearly curving from the mastoid process (posterior border) backward and upward towards the torcular-herophili. The knee portion or bulbar region is not outlined owing to its dense bony structure overlying it. I have one case where I have made a diagnosis of thrombosis of the lateral sinus before I took a radiogram, operated on and found the diagnosis correct. I did not wait for the development of the plate, so next day examined and found the outline of the thrombosed sinus clearly outlined. I wish to simply place this on record, knowing that one case is no criterion to go by.

As to the middle ear, that can be made out especially when the hammer is present, since that little bone is seen in the middle of clear oval space. Very low down on the plate is seen the other mastoid tip.

PLATE 31.—Normal mastoid, pneumatic variety. One will see both mastoids on one plate, the upper one is the one next to the plate and is shown completely in proper relation to the other structures and landmarks. The lower or opposite mastoid shows only tip, and even that is shadowed by the other dense structures. The mastoid proper shows the middle ear clear and a streak running through its anterior half, which is the hammer. In front of the middle ear is the glenoid fossa and the condyloid process of the lower jaw. The mastoid process, with its cells, can be clearly outlined. These cells vary a great deal in size and distinct partitions are made out; one large cell is also seen close to the external canal, most probably the antrum. Some of the cells are seen running over into the root of the zygoma. The curvilinear shadow of a groove represents the lateral sinus. It can only be made out outside of the mastoid process. The various sutures, the middle and posterior fossa are clearly shown. I have not been able to see any of the deeper structures of the internal ear, such as the vestibular apparatus or the cochlea. These normal heads vary considerably in mastoid cells and in the size of the entire process, but one side usually corresponds to the opposite side; that is to say, when we have diploic mastoid process on one side it is also of that type on the opposite side.

PLATE 32.—Normal mastoid diploic variety. This shows a small mastoid process with practically no mastoid cells; except the one cell, the antrum. This is seen to be higher up than it is in the pneumatic variety. One will also notice a peculiar formation of the lower jaw, the ramus appearing almost as a straight line of comparison to the angular appearance in the pneumatic type. In fact, the whole configuration of the face and head appear small, especially is this noticeable in the malar bones. There is a faint outline of the lateral sinus, which comes up very close to the posterior wall of the auditory canal, but only operation or post-mortem examination could prove this point. Neither one of these opportunities have I as yet had to demonstrate this previously by radiogram.

PLATE 33.—These two radiograms show an acute mastoiditis in comparison to its opposite normal mastoid. One observes the middle ear dull and obstructed and the mastoid cells obliterated, although the partitions are still to be made out very faintly. The tympanic membrane was freely incised and drained. Mastoid symptoms subsided and ear became dry after three weeks.

PLATE 34.—This plate shows the same mastoid recovered practically to the normal one.

PLATE 35.—(Four radiograms placed on one plate, as described.) This series of mastoid radiograms show a case of an acute suppurative otitis media supiora of a grippal type, although the culture of the incised tympanic membrane showed a pure culture of *Staphylococcus aureus*, going on to an acute mastoiditis. After seven weeks of local treatment, reincision of the tympanic membrane and autovaccine therapy, the mastoid had to be operated on. At the

operation the anatomic and pathologic conditions were precisely what the radiogram showed beforehand, that is, complete destruction of the interior of the mastoid process. You will observe that the septa between the cells had all melted away, so to speak. There were, however, no external manifestations of this destructive trouble, a fact well known in our surgical experience. The first radiogram shows a normal mastoid; the second an acute violent process after three days, the septa of the cells still seen clearly; third, four weeks later, speta less distinct, more opacity to the mastoid region; fourth and last, just before operation, showing the above mentioned characteristics.

PLATE 36.—Shows this mastoid three weeks after operation, discharge from the auditory canal having ceased on the second day after operation, and the external wound healed on the twentieth day. All one can make out at this time is a clear middle ear with a complete obliteration of the mastoid cavity.

PLATE 37.—These two radiograms are of precisely the same kind of a case, and I show them because the patient had symptoms of cerebellar abscess. The radiogram, however, shows nothing pathologic in the posterior fossa. After operation all the symptoms, such as vomiting, nystagmus, staggering gait, slow pulse and sub-normal temperature, disappeared and the ear was dry after three days. In two weeks the hearing was practically normal.

PLATE 38.—Shows the case two weeks after operation.

PLATE 39.—Simple acute mastoid operative case, which was filled with bismuth paste No. 2, which consists of bismuth subnitrate 30, vaselin 60, paraffin 5, and white wax 5 per cent. This paste was injected right after operation and wound closed primarily with uneventful recovery. The ear was dry eleven days after operation. The skin had two stitch points of suppuration, which, however, healed very easily and the patient was discharged on the seventeenth day. At the time the radiogram was taken one can still see some of the bismuth paste in the wound. I have similar cases which show its presence as late as two months after injection.

PLATE 40.—Ear radically operated on two years previous to the taking of radiogram. One can see simply the outline of the exenterated cavity of the remaining or reformed bone. Shows no cells remaining anywhere.

PLATE 41.—Chronic suppuration of the middle ear, treated by me for the past two years. Never had any pain nor clinical evidence of necrosis. The patient refuses operation. The mastoid shows no mastoid cells, which is a sclerosis. This one spot looks bad and I take that as a possible point of necrosis, but cannot say this with certainty unless I operate on the case.

PLATE 42.—Chronic otitis media catarrhalis (markedly progressed type). This shows an extremely clear middle ear and mastoid cells. One will explain this from the fact that the sclerotic process has been so marked as to cause complete atrophy of the mucosa of the middle ear and modified mucous membrane of the cells. I have observed in the few cases of ossiculectomy which I have performed on these cases, a very dry whitish appearing middle ear. Also post-mortem examination of the middle ear and mastoid process of cases that died from some intercurrent diseases, which I had observed and diagnosed for some time previous as chronic adhesive middle ear conditions, showed this atrophic appearance of the lining membrane.

I will conclude my remarks by saying that practically every case that I have had rayed showed something of special interest, and so could go on for some time illustrating plates to you, but since most of the essential conditions and points have been brought before you, will be pleased to hear what other gentlemen have to say on the subject, and if I have failed to make myself clear I will be glad to answer any questions which may be asked. So far as the stereoscopic radiograms of the head are concerned, I wish to say that this is the subject with which we are now experimenting and hope to be able to bring our results before you next year, whatever they may be. Suffice it to say at this time that the results obtained thus far have not been satisfactory enough to employ the method for practical purposes. There are several points of interest in our experimental line

of radiography which I would like to mention, and I will be pleased to give information regarding same to any one interested in this work, namely: 1. Injections of the tonsils and radiographs of them. 2. Injection of the tonsil crypts and radiographs of them. 3. Injections of the vascular supply of the organs of special sense, as eyes, ears, nose and tongue, and radiographs of them. 4. Filling out the cavities of the antra, frontal and sphenoids with the bismuth and shown in radiograms. 5. Comparative anatomy of skulls of the monkey, ape, lion, tiger, dog, cat, rabbit, rat, mouse and other lower animals, with special reference to the study of the accessory sinuses and mastoid process.

TECHNIQUE.

Dr. Francis Turley (Radiographer of the North Chicago Hospital):—It is my privilege to illustrate the three methods used in taking radiographs of the head for the purpose of showing the nasal cavities and their communicating sinuses, the middle ear and mastoid cells.

An *x*-ray tube of medium vacuum is best. The timing refers to the Cramer plate, which is slower than the Lumière. The coil used is a 16 inch, energised by a 110 volt current, with about 20 amperes in the primary. For the purpose of showing the nasal cavities and communicating sinuses to advantage, excepting the sphenoid, the postero-anterior position is best. A head-rest, inclined at an angle of 25 degrees with the table is used. The plate, 8 by 10 inches in size, is held on this incline by a thin moulding three and a half inches from the table.

The patient is placed on the abdomen, the face resting with the forehead and nose upon the plate, the line of the hair at top and the chin above the bottom, the middle line of the face corresponding with the middle line of the plate from above downward. This radiograph will give a clear view of the nasal cavities, the frontal sinuses, the ethmoid cells, the antrums, the orbits, the mastoid tips in most cases and the contour of the lower jaw. An exposure averaging thirty seconds is needed.

The lateral positions are two, the level position, taken with the patient upon the side, the plane bisecting the head from before backward, being parallel to the plate. To get this position a box-like head-rest must be used, having an elevation of about five inches. Exposure averaging fifteen seconds. This radiograph will show the depth of the frontal sinuses, the spenoidal sinuses and the sella turcica.

The second lateral position is the inclined position taken for the purpose of showing the middle ear and mastoid cells. The same head-rest is used as for the postero-anterior position. The patient lies flat on the abdomen, the mastoid region being as near the center of the plate as possible, the bisecting plane of the head being parallel with the plane of the head-rest, as before.

In the first lateral position the object is to superimpose the two sides, one above the other, as perfectly as possible. Thus one mastoid obscures the other. In the inclined lateral position the mastoid process on the plate is much higher than the other, the smoother portion of the skull above the base being directly above the mastoid and ear. This radiograph shows the middle ear, the mastoid process and cells, the glenoid fossa and a part of the foramen magnum.

For the purpose of taking stereoscopic radiographs we have head-rests like the ones described, capable of containing an 8 by 10 plate, in either its long or short diameter. The head of the patient is separated from the plate by a sheet of aluminum 1/16 inch in thickness.

The adjustment of tube, plate and patient is made as usual. The tube is moved 1¼ inches to the right and an exposure made. This plate is removed and another put in its place. The tube is then moved 2½ inches from this position to the left and a second exposure made. Thus two radiographs are produced with the patient in exactly the same position relative to the plate, and these two pictures will stereoscope perfectly with a pair of glasses made for this purpose.

A few general remarks will not be amiss in concluding this subject. The same developer is used by us for these plates as for all others, namely, ostol and hydroquinon. They develop relatively slowly. Wet plates should not be looked at unless necessary, as they are easily scratched and the heat from the shadow-box softens the film.

There are a few contraindications to the abdominal position which will occur to you, as abdominal tumors of large size, great ascites, advanced pregnancy, appendicitis with abscess formation and typhoid fever in its later stages.

The lying position has several advantages, especially the abdominal over the sitting. The body is absolutely at rest and with the head turned to one side and the body upon the abdomen the head is not readily movable. Children especially, when they can be managed at all, lie at perfect ease in this manner.

Care must be taken to have the bisecting antero-posterior plane of the head parallel with the plane of the head-rest, as described above, or the purpose for which the exposures are made will be defeated, a distorted image being produced.

VARIATION OF TECHNIC OF RADIOGRAPHY TO PRODUCE A LIMITED REGIONAL PICTURE.

Dr. P. S. O'Donnell exhibited radiographs taken of a child, three years old, who had swallowed a scarf-pin. The first radiograph showed the pin away down in the abdomen on the right side. The second radiograph, taken three hours later, showed the pin on the opposite side, and the third radiograph, taken three hours later, showed the pin still traveling. At 8:30 o'clock the next morning the pin was again on the right side and at 10:30 a. m. it was descending into the rectum. Fifteen minutes later it was extracted by means of forceps. Dr. O'Donnell also described briefly his method of making radiographs by means of two or three tubes, so as to lessen the density of the object to be penetrated by the rays. Better results are obtained in this way than by the usual method. Each tube is excited by an individual apparatus. The picture-taking tube is placed directly in front or above the part to be examined, and the auxiliary tube is placed on the side, so as to illumine that part in a lateral direction.

Dr. Ira Frank showed radiograms of acute antrum disease, necrosis of the lower jaw, alveolar abscess and double ethmoiditis. In one of the plates there appeared a screw which had been introduced into the infraorbital foramen following removal of the nerve for neuralgia.

RADIOGRAPHY OF THE ACCESSORY NASAL SINUSES.

Dr. E. Fletcher Ingals presented a number of radiographic negatives showing a probe in the naso-frontal duct and others showing a self-retaining drainage tube in the enlarged drainage canal after his operation for intranasal drainage of the frontal sinus. He said, in part, that where the naso-frontal duct is fairly large we may often satisfy ourselves, by introducing a probe, whether or not there is likely to be any danger from enlarging the naso-frontal duct to a canal 6 mm. in diameter; that when any doubt exists in the mind of the operator as to whether or not his probe actually enters the frontal sinus, or as to the relations of the naso-frontal duct to the fossa ethmoidalis, or to the posterior wall (tabula interna) of the frontal sinus, good frontal and lateral radiographs should be taken with the probe in the duct. In making the frontal exposure the x-rays should pass in the plane from the occipital protuberance to the supraorbital ridges while the patient rests with his face on the plate. In taking the lateral view the rays must pass at right angles (perpendicular) to the plate on a plane through both frontal sinuses, the patient lying with the affected side on the plate. To secure this direction of the x-rays a right angle of some kind, for example a squarely cut magazine, is placed with its edge on the plate and the end against the patient's forehead so that both frontal sinuses are brought into the same plane. He presented also one lateral and one frontal negative showing the drainage tube in position on one side and the probe in the naso-frontal duct of the opposite side, just prior to the second operation on a patient with frontal sinusitis of both sides. He stated that he considered the radiograph, like transillumination, to be an important aid in diagnosis; that the two are of equal value, but that he questioned whether either will surely reveal the absence of a frontal sinus; therefore, one should not operate for frontal sinusitis without having established the diagnosis by other methods.

Dr. Norval H. Pierce showed radiographs of a case of aneurysm of the aorta treated for eighteen months for cough and loss of voice. The man, aged 70 years, had paralysis of the left vocal cord. Laryngeal tugging was well marked, as

were the other symptoms of aneurysm. He also showed a radiograph of a case of frontal sinus empyema.

Dr. W. P. McGibbon exhibited radiographs of a case of bilateral suppurative ethmoid disease.

Dr. George E. Shambaugh exhibited several radiographs of a case in which the diagnosis of the condition in the frontal sinus was complicated on account of the invasion of this sinus by a large ethmoid cell. In attempting to introduce a probe into the frontal sinus, the ethmoid cell was more readily entered than the sinus itself. The ethmoid cell was not the seat of an empyema, but the frontal sinus was. The radiograph showed the outlines of the ethmoid cell inside of the frontal sinus, and the canula was clearly shown in one radiograph lodged in the ethmoid cell; in the other it was free in the frontal sinus.

Dr. J. Holinger showed two radiographs of a case of diffuse mastoiditis in which the symptoms complained of were headache, fever and a purulent discharge from the nostrils, with pain in various parts of the head and neck.

Dr. F. Gurney Stubbs showed an interesting radiograph in a case where the following symptoms had been noted: Two years ago the patient, in apparently perfect health, began gradually to lose the sight first in the right half and then in the left half of the right eye. Two months ago he began to notice that the vision was becoming impaired in the left half of the left eye. The *x*-ray plates that were taken showed a distinct shadow in the region of the sphenoid sinus and sella turcica. The question arises whether this shadow is caused by a tumor in the sella turcica or by suppuration in the sphenoid sinus. Dr. Stubbs examined the patient intranasally in order to determine this question. He found no evidence of intranasal suppuration. A canula was introduced into both sphenoid sinuses but no secretion was discovered either by inflation with air or syringing with water. The case is one that illustrates the necessity ofttimes of calling for the assistance of a rhinologist in order to help in forming a clear judgment in regard to the interpretation of the radiograph.

DISCUSSION.

Dr. J. Holinger doubted the accuracy of the statement that the mastoids in the same individual are in all respects alike. It is possible for one mastoid process to be pneumatic while the other is also composed of a number of large cells. On the other hand, it may be possible for one process to be small and composed of compact bone, while the other one is of the same type but may differ in important surgical details. You can scarcely pick up a skull where the grooves of the sinuses, for example, are equally deep on both sides. In several cases in which he operated he found the mastoids not alike, and in one case in which a double mastoid operation was done, the first blow on the chisel drove the instrument into the sinus and a severe hemorrhage followed, while on the opposite, previously operated on, the sinus was more than 1 cm. from the surface. Therefore, he believed that it was dangerous to teach that the mastoids in the same individual are like.

Dr. George E. Shambaugh, in discussion, called attention to the fact that as time goes on we learn to make better and better plates, that we are more often able to certify the results of an intranasal examination of the conditions in the accessory sinuses by the findings in the radiographs. At the same time it must be evident to every one who is doing careful work in rhinology that the value of the *x*-ray in the diagnosis of the conditions in the sinuses, falls far short of the accurate knowledge to be acquired from a careful, thorough-going intranasal examination. As a means of verifying an intranasal examination, the *x*-ray is very valuable, but those who have mastered the technic of intranasal examination of the accessory sinuses can usually dispense with the *x*-ray in forming an accurate diagnosis. The principal value of the radiograph is to show the size, shape, etc., of the sinuses, especially the frontal sinus. But even this knowledge is of lessened importance, as we are learning more and more how to select the cases of frontal sinus disease that call for extranasal operation. When a case of frontal sinus disease calls for an extreme operation, the situation is one that cannot be

much influenced by the size or shape of the sinus itself. Still, the surgeon will feel more confident before operating upon one of these cases, if he knows beforehand what the sinus is like anatomically.

Dr. Joseph C. Beck stated that an examination of four thousand skulls by a man of authority showed that there is a great deal of uniformity in the mastoids of any one skull, and that Dr. Hollinger's case may have been the exception. A careful examination of radiographs, however, discloses quite a similarity in the size and shape of the mastoid cells. Dr. Shambaugh, he said, contradicted himself by stating that the radiograph is not of much value, because in the plates he showed it was very evident that he would have failed to account for the condition present without the aid of the *x*-ray. As for intranasal operations, it is useless, he said, to attempt to cure a chronic frontal sinusitis through the nose when the sinuses extend far over to the sides, or when many septa are present. It has been the practice of most radiologists to ignore entirely the technic of taking radiographs, so that they are not always of as much value as they might be. If taken in the right direction and at the right angle, radiographs are exceedingly useful.

CHICAGO OPHTHALMOLOGICAL SOCIETY.

*Regular Meeting, March 8, 1909.**

A regular meeting was held March 8, 1909, with the president, Dr. Frank Allport, in the chair.

SYMPOSIUM ON SYPHILIS.

EXTRAOCULAR SYPHILIS.

Dr. Casey Wood read a paper on "Syphilis of the External Eye." He drew attention to luetic affections of the lachrymal gland, which he regards as rare.

Chancre of the lid is readily confused with suppurating chalazion and even with an acute purulent dacryocystitis. Gumma of the eyelid is another rare disease. Lues of the conjunctiva includes mucous patches, gumma, chancre and other syphilides.

Although the older opthalmologists believed the sclera to be immune from attacks of syphilis we know this contention to be unfounded, although sclerotic alterations due to lues are rare and prone to be regarded as non-specific or as tubercular.

Tarsitis syphilitica is rather uncommon, although the diagnosis, by modern means, is easily possible.

The lachrymal apparatus often suffers—especially in conjunction with nasal duct obstruction, the result of periosteal and bony disease—the luetic origin of which is always to be suspected.

By far the most common luetic disease of the external eye, mostly due to congenital infection, is interstitial or parenchymatous keratitis. Probably 75 per cent. of the cases are due to hereditary syphilis. Dr. Wood entered fully into a consideration of its treatment and believes that hygienic measures—outdoor life, tonics, etc., are of more importance in the general conduct of the case than specific remedies.

THE DIAGNOSIS OF SYPHILITIC EYE LESIONS BY MEANS OF THE SPIROCHETE PALLIDA AND THE SERUM REACTION OF WASSERMANN.

Dr. B. C. Corbus read a paper on this subject.

With the discovery of the spirochete came its demonstration with the staining methods, which at first were more or less successful in skilled hands, but the demand for a simpler and more reliable method, led Richert, the instrument maker of Vienna, to reintroduce the dark illuminator. Here we have a method which is extremely simple, the technique of which can be mastered by the average physician.

During the past eighteen months Dr. Harris and Dr. Corbus have examined some two hundred cases. These have been confined to primary lesions on the

* The meeting of April 12, was reported in the November Journal, page 620.

penis, hands and lips and secondary lesions, comprising condylomata, mucous patches, papules and enlarged inguinal glands.

Numerous English and American ophthalmologists lay considerable stress on the fact that the spirochæte are found in apparently healthy eyes of fetuses and infants who have died from congenital syphilis. This is not at all surprising when we realize that the fetal circulation is fairly alive with the organisms and that they are easily demonstrated in every organ, particularly in those organs where there is an abundant blood supply, as for example, the chorioid coat of the eye.

From the preceding we would be led to presume that primary and secondary lesions of the eye are extremely rare. This in a measure is true, but it is highly probable that these conditions have been overlooked on account of insufficient means for diagnosis.

With the aid of the dark ground illuminator, we have a rapid, reliable and simple method of differentiating these ulcers and as a farther means of diagnosing syphilitic eye lesions we have the serum test of Wassermann, Neisser and Bruck.

Whether the limitations of this test extend beyond the mere diagnosis and permits us to judge in some degree of the effectiveness of a cure, time alone will tell. The tendency of the modern treatment of syphilis is toward a biologic treatment, that is, to control the treatment with the Wassermann reaction. Of one thing we are positive, that the Wassermann reaction gives us control of the diagnosis after the period of second incubation, no matter what length of time has elapsed, provided the patient is not cured.

Unfortunately the Wassermann reaction is complicated. It requires time, patience and careful work and each series of tests must be controlled by known normal and syphilitic sera. Statistics in regard to the value of this reaction are now available in large numbers and there seems to be no branch of medicine or surgery that is not benefited by this discovery.

Dr. Corbus and Dr. Harris concluded:

1. That spirochaete pallida are present in all syphilitic lesions, including those of the eye.

2. In chancres and mucous patches, the diagnosis should be made by the demonstration of the spirochaete.

3. All other lesions of the eye of syphilitic origin may be diagnosed by means of the Wassermann test.

4. Eye conditions depending upon pathological changes in the nervous system of syphilitic origin may be diagnosed by the Wassermann test.

5. All doubtful cases that might be explained on a syphilitic basis should be given the Wassermann test.

Dr. Corbus and Dr. Harris explained in detail the Wassermann test and demonstrated the living spirochaete before the society.

INTRAOCULAR SYPHILIS.

Dr. William H. Wilder read a paper on the above subject, an abstract of the principal points being as follows:

Syphilis is the cause of from one per cent. to three per cent. of all eye diseases. By far the largest number of all syphilitic lesions of the eyeball are of the intraocular structures.

The iris and ciliary body are more frequently affected by syphilis than any other part of the eye. Syphilitic iritis usually manifests itself as a plastic inflammation. It affects one eye in the majority of cases, but one-fourth of them are bilateral. The appearance of the disease in the second eye may be considerably delayed, sometimes for a year. With the exception of the papular or condylomatous form, separately considered, there are no marked distinguishing features that speak for the specific etiology of the disease and one must rely upon the history and other manifestations of syphilis to determine the exact nature of the process. Iritis, condylomatous or papulosa, is supposed to be characteristic of syphilis. One, sometimes two or more, grayish yellow or reddish brown

nodules appear on the papillary margin of the iris, and at this site there is usually a posterior synechia. About 8 per cent. of cases of syphilitic iritis present this feature.

There has been considerable discussion as to the nature of these nodules, some regarding them as condylomata and others as true gummata. When appearing in the secondary stage, as they usually do, it is probably nearer the truth to call them condylomata. True gumma of the iris may form in the later stage of the disease. It frequently affects the root of the iris, but more frequently pushes forward from the ciliary body. The disease usually appears at the time of the syphilides, about six months after the initial lesion, but it may appear before or be delayed for a year or more. The course is much like that of an ordinary case of iritis, but on the whole the prognosis is rather more grave. Especially true is this of the condylomatous and gummatous forms, for many of these eyes are lost because of the severity of the inflammation. Except when the papular form is present, which is rather characteristic, one cannot be sure of the syphilitic nature of a given case of iritis. The distinct history of hard chancre and the presence of syphilids and other luetic manifestations make the diagnosis reasonably certain. However, in the majority of cases the clinical evidences are not sufficient to enable us to distinguish the syphilitic from other forms of iritis, and this is even more true of eyelitis, chorioiditis, retinitis and optic neuritis.

The spirochete pallida has been found in the aqueous humor by some observers, and this test might be made use of for differentiation. The recent reports on the value of serum diagnosis developed by Wassermann and Plaut from the principle of complement fixation, hold out the hope that a method has been discovered that will be of great value to the ophthalmologist in determining the exact nature of certain obscure lesions of the eye.

Chorioiditis frequently occurs as a complication of iridocyclitis. There is no clinical appearance that is distinctly characteristic of syphilis in any of the lesions of chorioid or retina with possibly the exception of diffuse chorio-retinitis.

Acute irido-chorioiditis manifests itself by an increase of the evidences of inflammation in a case of iritis. The vision is reduced and the tension lowered. Numerous opacities in the vitreous make it impossible to see the fundus. The prognosis is grave, for the retina may become detached and the eyeball may shrink.

TREATMENT OF SYPHILIS.

Dr. W. L. Baum presented this feature of the subject.

Dr. Thomas L. Dagg stated that the diagnosis of syphilis by means of laboratory methods has become popular by reason of its accuracy, although as stated by Dr. Corbus, the technic is beset by many difficulties. The spirochete can be demonstrated in the lesions, thus making the diagnosis absolute, but the staining methods are far from being satisfactory. The Spiegel condenser method is satisfactory when the spirochete is present, but is of no value whatever in a negative way. The Wassermann reaction is valuable when positive results are obtained, but the test is beset with difficulties. The use of the organ extract is liable to be made difficult because of the age of the extract; therefore, Dr. Dagg and his co-workers are now investigating the method of Noguchi, who employs lecithin as an antigen, and he uses human blood as well as the hemolytic inactivated serum prepared from human blood. This simplifies the method not only for the biological laboratory, but also for the general practitioner. The method is still in its infancy, but Noguchi's results are very gratifying and positive findings are fully as frequent as with the original Wassermann test.

Dr. Henry Gradle saw a striking instance of tarsitis, which he followed to recovery, occurring in a female with a definite syphilitic history, although there were no free manifestations at the time. The tarsus was enormously swollen and because of a feeling of fluctuation that was present, an incision was made with the hope of finding fluid. None was found. Anti-syphilitic treatment

was ineffective until after about three months, when the disease gradually disappeared and after four or five months there was no evidence of it and the tarsus was intact. Whether recovery was due to the treatment could not be determined in this case.

As to the etiology of interstitial keratitis, Dr. Gradle is convinced that it is easy to determine whether syphilis or tuberculosis is the cause of keratitis. If the affection occurs in both eyes, either simultaneously or in close sequence, beginning as a cloudiness at the periphery, and spreading over the entire cornea, with the formation of blood vessels in the deeper strata, it is always a case of syphilis. Tuberculosis is usually monocular, and no new vessels are formed in the inflammatory tissue. Hirschberg, he said, laid stress on the fact that one can always demonstrate new vessels in a keratitis of syphilitic origin. The prognosis is in inverse proportion to vascularization. The cases showing the greatest formation of vessels in the cornea from the start are most likely to prove serious, and to leave the greatest optical disturbance. Dr. Gradle has seen only one instance of absolute recovery of perfect transparency of the cornea. The history was beyond question. Vascularity was marked. The picture was not typical, but it involved both eyes and began as a peripheral cloudiness which spread over the entire cornea, clearing up in four or five months and leaving the cornea absolutely transparent. The history of these cases is exceedingly prolonged. Dr. Gradle has known a few cases to pass practically through the entire period of climaxes and recovery to the limit with six or seven months. Sometimes vascularization is absent entirely, and these cases usually go on to a speedy recovery. He has known one case of almost complete blindness due to persistent opacity.

Dr. Gradle agreed with Dr. Wood as to the ineffectiveness of antisyphilitic treatment. At one time he felt that he could influence the course of the disease by administering large doses of iodin, but he now inclines to the belief that that was an error of observation, because it could not be confirmed. Stevenson gives a toxin in moderate doses, with continued mercurial medication, but the results are not convincing and many cases of damage to the optic nerve are recorded.

As regards recovery of cases of syphilitic iritis, he has never seen a case that did not recover entirely, except that synechiæ are left. It occasionally affords a very interesting observation, showing that it can be prevented by specific treatment or is influenced markedly by specific treatment, to this effect that it occasionally occurs in patients who have been under moderately active treatment, and still the disease makes its appearance in one eye. If treatment is pushed and the disease occurs in the second eye, it runs a milder course, but he does not believe that it can be prevented entirely by specific treatment. He has noted that syphilitic iritis seems to be more obstinate in those cases where cutaneous manifestation takes the form of the eruption of lichen.

Dr. Charles H. Beard confined his part of the discussion of intraocular syphilis to demonstrations of the appearance of specific chorioiditis and chorioretinitis.

Dr. George F. Suker said that a number of years ago he advocated the use of large doses of potassium iodid, even up to one thousand grains a day, but no one received the suggestion with favor; therefore, he was rather pleased at Dr. Baum's advocacy of large doses. He was also pleased to hear Dr. Wilder's classification of iritis. He has seen but few cases of multiple gummata of the iris; as a rule, they are single, and project from behind forward, crowding the iris and projecting through a rent in the iris. A papule, on the other hand, destroys the iris tissue, as a whole. As to parenchymatous keratitis, he has pursued a line of treatment similar to that outlined by Dr. Wood—hygiene, feeding and toning up the patient's general condition rather than giving antispecifics. He has had most excellent results, although the opacity does not disappear entirely. There always remains some haziness and the disease is of longer duration. One case lasted seven years, but that was an exception.

With reference to the pigmentation in the iris, if one will observe the iris after the attack of syphilitic iritis which has been practically cured, he will find more absorption of the pigment than occurs in any other form of iritis, and the pigment is much finer than in any other form. This is a very characteristic sign. He agreed with Dr. Wilder that the majority of cases of syphilitic iritis are complicated by more or less involvement of the anterior portion of the chorioid. An examination of the anterior portion of the fundus will disclose evidence of such involvement. Contrary to the usual opinion, Dr. Suker does not believe in giving potassium iodid or mercury early in the attack during the acute stage. It is adding insult to injury, the tissues being already loaded down with discharge, and should not be subjected to any further glandular stimulation.

Dr. O. Tydings agreed with all Dr. Baum said with regard to the treatment by large doses of mercury and iodids, but the question is: Is the lesion a specific one or not? If it is specific, antispecific treatment is indicated, but it must be remembered that some of these cases will get well after years of treatment. He recently dismissed a case of interstitial keratitis in a young man, twenty-four years of age, who had beeen under treatment for seven years. The Wassermann test and finding the spirochete are great aids in diagnosis.

As to the matter of inheritance, the question arises whether it comes from the male or from the female. The female may pass through life without any external evidence of specific disease, and yet the offspring is syphilitic. If the disease is propagated by the male, how is it propagated? Is the spermatozoon capable of carrying the spirochete?

Dr. F. G. Harris said that the probabilities are that the mother is infected with syphilis and herself infects the ovule, which has been shown to contain the spirochete. Even such a woman presents no external evidence of syphilis, the Wassermann test is positive, and her offspring is syphilitic. Why the mother is free from symptoms and signs has not been explained. A typhoid may recover from the disease and carry organisms around in the body for the remainder of his life without showing any pathologic change. The same thing may be true of the mother infected with syphilis.

As to potassium iodid, it has been shown that the potassium iodid treatment in syphilis is purely symptomatic and that the more modern treatment is etiologic. The iritis is due to the spirochete. It has been found in the lesions of the eye, heart, cerebrum and elsewhere, showing that it is the etiologic cause of syphilis. It is true that the iodid will remove the products of inflammation, but it does not cure the syphilis; therefore, a recurring iritis means that the disease is still active. Mercury and arsenic are the only drugs that annihilate the spirochete; therefore, mercury is indicated whenever a diagnosis of syphilis is made, no matter in what stage. Mercury cures the disease.

Dr. L. Wallace Dean said that for three years he has not been giving any systematic treatment for the hereditary forms of interstitial keratitis, but in the acquired syphilis he has not been able to get any results except by pushing systematic treatment.

Dr. Julius Grinker said that it was found many years ago that in the tertiary lesions of the brain, iodids very often failed unless vigorous mercurial treatment was instituted. That knowledge was empirical, but now we know that such treatment really was good scientific practice, using mercury for the advanced lesions and the early ones, and later on using the iodids. In the secondary stage of syphilis mercury is indicated, but the tertiary lesions must be treated by iodids.

Dr. B. C. Corbus believes that there is no test superior to the Wassermann test, although, as in the case of every new discovery, imitations soon appear. The Wassermann test is positive for syphilis, but also gives a reaction in frambesia, yaws and even in scarlet fever. We now use an alcoholic extract, and one syphilitic liver will produce about a quart of antigen, and remain stable for two or three years. Dr. Corbus has also used the guinea-pig heart with fair success. In one case of supposed congenital syphilis of the eye the test was made with the heart antigen from the guinea-pig and with liver antigen. The former gave

a negative result, while the latter gave a positive result. It was concluded that the syphilitic anti-body was so fine that the heart antigen could not detect it, whereas the liver antigen, being more powerful, gave a positive reaction.

Dr. Casey A. Wood said that he spoke more particularly of the anti-syphilitic treatment of interstitial keratitis, and that he is very much in favor of the general anti-syphilitic treatment in the great majority of other syphilitic diseases of the eye. He asked Dr. Baum as to the value of intravenous injections of mercurials and whether the course pursued by Darier and others who used limited amounts of antitoxin is entirely safe. Darier believes that one-half the ordinary dosage of atoxyl given for a great length of time is safe, so far as the eye is concerned, and that all cases of disturbance have occurred with a larger dose.

Dr. Wilder said that his experience is in accord with the experience of others in regard to the graver prognostic import of syphilitic iritis, as compared with the simple forms of iritis, but that does not mean that many of the cases of syphilitic iritis do not recover fully.

As to the large doses of iodid of potassium, he believes in their efficacy, particularly when nervous structures are involved. There is no dosage of potassium iodid; it depends on circumstances. He has seen nuclear palsies of the eye disappear, but not until after he had reached heroic doses. One case of palsy of the external rectus did not yield to treatment until the patient was taking 600 grains of potassium iodid three times a day.

As to the quality of potassium iodid used, he wanted Dr. Baum to say whether certain makes of potassium iodid are better than others. He has been informed that Merck markets four grades of potassium iodid, running in value up to the highest purity. In sensitive persons there is always some gastric disturbance in spite of the fact that iodid is given with certain pepsin preparations, but since using the Merck iodid of highest purity, he has not noted this disturbance.

Dr. William L. Baum answered Dr. Wood's question by stating that small doses of atoxyl have not given better results than moderate doses of mercury. Intravenous injections of mercury were popular years ago, but are no longer considered good practice. The results are not strikingly better than from hypodermic medication, and the danger of clot formation, which he does not believe to be very great, might become so in the hands of those who are not skilled in the technic of the injection.

As regards the different grades of potassium iodid, he said that there has crept into use, for financial reasons, the employment of iodids which are not strictly pure, therefore, it was found necessary to market iodids of various grades. He advised the best grade always and some manufacturers make better iodids than others, but owing to the fact that the profession has been discouraged from specifying certain mixed preparations, he hesitated to speak about this point. He also advised giving pepsin preparations and called particular attention to the necessity of proper dilution, because saturated solution of potassium iodid produced congestion of mucous membranes. Therefore, large doses well diluted can be used with safety. That is also the reason for giving iodids after meals or when food is present in the stomach. In case of intestinal congestion, it is advisable to give lactopeptin instead of pepsin. One point we must not lose sight of is the fact that syphilis must be treated by mercury for a minimum period of three years, and for every year of the patient's life thereafter. He is convinced that the time will come that the Wassermann test or some modification of it may be employed by every physician, and we can then say when the time has arrived that the patient is no longer in need of anti-specific treatment. When the test is positive, treatment must again be instituted. That will also determine the amount and specific treatment necessary. There is another reason for lengthening the duration of treatment, and that is that every syphilitic has a tendency toward hardening of the vessels, and increasing the blood pressure. It is in these cases particularly that iodids are indicated, because they remove

from the vessels certain elements which decrease their elasticity, and to a certain extent lower the blood pressure. He is firmly convinced that we add to the expectation of life of the syphilitic at least a period of from five to ten years, by pursuing such a course, but he must receive some sort of treatment as long as he lives.

WILLIS O. NANCE, Secretary.

DE WITT COUNTY.

The DeWitt County Medical Society held its quarterly meeting in the County Court room, Clinton, October 28, there being about fifteen members present. The program was as follows: "The Management of Typhoid Fever," by Dr. T. W. Bath, Bloomington. Discussion opened by Dr. Myers. "The Delirium of Typhoid Fever," by Dr. S. A. Graham, Clinton. Discussion opened by Dr. Davis, Farmer City. "The Treatment of Typhoid Fever," by Dr. W. H. Kirby, Chestnut. Discussion opened by Dr. Sanderson, Waynesville. "The Hygiene of Typhoid Fever," by Dr. C. V. Carter, Clinton. Discussion opened by Dr. Chapin, Weldon. The talk by Dr. Bath was especially valuable, as he has had wide experience in the treatment of typhoid fever both in military and civil practice, having been a surgeon in the United States Army in Cuba and elsewhere.

LA SALLE COUNTY.

The LaSalle County Medical Society met in LaSalle October 26, 1909. The program was as follows: "Ulcer of the Cornea," by Dr. H. C. Hill, Streator. "Intestinal Surgery, with Report of a Case," Dr. T. W. Burrows, Ottawa. "Notes Taken in Mayo's Clinic on Diagnosis of Ulcer and Cancer of the Stomach," Dr. P. N. Burke, LaSalle. "Report of Two Interesting Cases," Dr. E. W. Weis, Ottawa.

MERCER COUNTY.

Mercer County Medical Society convened in regular session in the County Court room at Aledo at 1:30 p. m., Oct. 12, 1909. Dr. J. H. Moore presided. After transacting the regular business the chair appointed the following committee on program: Dr. B. R. Winbigler, Seaton; Dr. V. A. McClanahan, Viola, and Dr. J. W. Wallace, Aledo. There were many physicians present who took active part in discussing the following papers on the program: Dr. J. W. Wallace, of Aledo, very ably presented a paper on the "Technique of a Normal Obstetrical Case." Dr. Clyde A. Finley, of Galesburg, presented in an impressive manner "The Operation of Choice in Appendicitis." The last on the program was a paper by Dr. Frank Egre, North Henderson, on "Collodion Dressing as a Substitute for Stitches in Wounds." The venerable doctor, instead of using a manuscript, addressed more as a lecture, as he propounded to the society the result of many years of practice.

No further business, the meeting adjourned.

A. N. MACKEY, Secretary-Treasurer.

MORGAN COUNTY.

The Morgan County Medical Society, together with the Medical Club, of Jacksonville, gave a testimonial banquet at the Pacific Hotel, Jacksonville, October 15, as a tribute of their great regard for Dr. Frank Parsons Norbury, who has lately been appointed superintendent of the Kankakee State Hospital. The more intimate associates of Dr. Norbury throughout Illinois, Eastern Missouri and Iowa were invited for the occasion. After the menu had been disposed of, the

men who were chosen to offer testimonials of the high esteem in which the guest of honor is held by all who have had the good fortunte to come in contact with him, had their opportunity. Of course, some attempts to be humorous had to be made, but when the testimony was all in and weighed, humor was on the light side of the balance. Those who spoke on the occasion and their sentiments were Roswell O. Post, D.D., invocation; Dr. Carl E. Black, master of toasts, Jacksonville; Dr. L. J. Harvey, Griggsville, "Neighbors;" Hon. Wm. C. Graves, Springfield, "It Is Better to Give Than to Receive;" Dr. James F. Percy, Galesburg, "An Appreciative Patient;" Dr. L. C. Taylor, Springfield, "Ideals of a Physician;" Dr. Albyn L. Adams, Jacksonville, for the Medical Club, "When Colleagues Part;" Dr. T. J. Pitner, Jacksonville, for the Medical Society, "Some Rewards of Service."

Dr. Norbury responded to the many sentiments of personal and professional regard given by his fellows in the simple sincere words that become a great man when he is almost too full of deep feeling to say anything at all. All who were fortunate enough to be present felt that the occasion was one of those in life that is worth while. All the men in the society and the club feel keenly the loss to their local profession entailed by Dr. Norbury's departure, yet we must content ourselves, because there is no loss here without great gain to the state and to humanity at large.

Letters and telegrams expressing testimonials and regrets were received by the committee, some of which were read at the banquet.

During the day, as an added courtesy to the out-of-town doctors, surgical and medical clinics and clinical reports were given at Passavant Hospital by Drs. Carl E. Black, A. L. Adams, D. W. Reid, J. W. Hairgrove and George Stacy.

Those present at the banquet were:

J. G. Franken.
B. S. Gailey.
T. O. Hardesty.
Elmer L. Crouch.
Wm. Parker.
Frank P. Boyd.
T. A. Wakely.
Irving Newcomer.
O. A. McIntosh.
E. F. Leonard.
T. G. Charles.
H. C. Campbell.
J. M. Elder.
G. W. Ross.
Stanley Castle.
D. W. Reid.
Grace Dewey.
A. M. King.
F. A. Norris.
W. P. Duncan.
P. E. Hofmann.
George Stacy.
L. C. Taylor.
Frank P. Norbury.
L. J. Harvey.
Hon. Wm. C. Graves.
Dr. Charles E. Cole.
P. C. Thompson.
A. T. Bartlett.
H. C. Woltman.
Geo. E. Baxter.
Geo. R. Bradley.
J. A. Day.
D. R. Gillies.
B. B. Dunn.
J. W. Hairgrove.
R. T. Hinton.
T. B. Throckmorton.
Robert Hanna.
F. H. Metcalf.
J. A. McGann.
C. M. Vertres.
C. L. Patton.
Josephine Milligan.
W. H. Weirich.
W. L. Treadway.
R. O. Post.
Albyn L. Adams.
C. U. Collins.
Carl E. Black.
J. F. Percy.
T. J. Pitner.
Edward Bowe.
S. S. Munson.

The members of the joint committee having the affair in charge were Drs W. P. Duncan, chairman; A. L. Adams, C. E. Cole, Edward Bowe, P. E. Hoffmann and

GEORGE STACY, Secretary.

OGLE COUNTY.

The Ogle County Medical Society met in the Court House in Oregon, Wednesday, October 27, 1909. Among those present were the following: Drs. C. E. Powell and Beard, of Polo; Curtis Powell, of Forreston; Stahley, of Freeport; Murphy, LeSage and Law, of Dixon; Replogle and Krettsinger, of Leaf River; Burridge, Sheets, Schneider and Aldrich, of Oregon; and Hanes, of Mount Morris.

STEPHENSON COUNTY.

The Autumnal meeting of the Stephenson County Medical Society was held at the court house in Freeport, Thursday, October 14. The President, Dr. A. E. Smith, being absent, Vice-President, Dr. B. E. Brockhausen, presided. Dr. N. R. Harlan being favorably reported on by the Board of Censors, was voted on and admitted to the Society. Application for membership was made by Dr. H. D. Wilson. The following answered to roll-call: Drs. Best, Chas. L. Rideout, Morrison, Burns, Rosensteil, Thompson, Snyder, E. H. Hutchins, Linda K. Phillips, Arnold, B. E. Brockhausen and Clark. The following interesting program elicited much interest and the discussions were good: "Acute Yellow Atrophy of the Liver," Dr. C. L. Best. "Observations of Medical Interest on an Eastern Trip," Dr. R. J. Burns. "Varicose Ulcers on the Legs," Dr. N. C. Phillips. "Intracranial Complications of Middle Ear Disease," Dr. W. J. Rideout.

J. SHELDON CLARK, Secretary.

TAZEWELL COUNTY.

The Tazewell County Medical Society met Tuesday, Oct. 5, 1909, at Delavan. The following program was given at 2 p. m. after dinner had been served, Dr. Muehlmann, the president, presiding: "Medical Organization, Past, Present and Future," Dr. J. L. Wiggins, president of the state society; "Treatment of Gastro-enteritis in Children," Dr. T. W. Gillespie, of Peoria; "Pellagra," Dr. Geo. A. Zeller, superintendent of Peoria State Hospital.

F. G. GALE, Secretary-Treasurer.

VERMILION COUNTY.

The Vermilion County Medical Society met in the Danville city hall Monday evening, September 13. This was the first meeting since June, as is customary during the summer months. The program was devoted to a paper on "Emergency Surgery" by Dr. Cloyd, of Catlin, which was excellent, and it was followed by a general discussion by all the members present. No other papers were presented on account of absence of two members on the program. The following members were present: Drs. Cloyd, Taylor, Miller, Dale, Clements, Becker, S. W. Jones, Hatfield, McIntosh, Wilkinson, Glidden, Gleeson, Williamson, Dice and Crist, with Drs. Strout and Hooker as guests.

At the meeting of October 11 the following members were present: Drs. Russell, Crist, Miller, Wilkinson, Hatfield, Glidden, Leo Fairhall, Joseph Fairhall, Cruikshank, Cooley, Clark, Sims, T. P. French, Becker, Clements, Gleeson, Steely, R. A. Cloyd, F. N. Cloyd, Solomon Jones, Babcock, Fisher, Guy, and Dr. Bird as a guest. Dr. James B. Herrick of Chicago, gave the society a very interesting and instructive lecture on the general subject of "Typhoid Fever." The society gave him a rising vote of thanks for his services and invited him to give another good lecture at some future time. After the program was finished, Drs. Holton, Hooker and Odbert were unanimously voted in as members of the society. The meeting adjourned to the second Monday in November.

GEO. STEELY, Secretary.

WABASH COUNTY.

The Wabash County Medical Society met at Scheck's Hall, October 25, at 3 p. m., and meeting was called to order by President, Dr. C. E. Gilliat. There was a good attendance. Dr. E. H. Lisher read a paper on Typhoid Fever, which was discussed by several members. Dr. S. W. Schneck read a paper on Emergency Surgery and this elicited a general discussion. The following were elected officers: Dr. C. E. Gilliat, President; Dr. S. W. Schneck, Vice-President; Dr. J. B. Maxwell, Secretary; Dr. E. H. Lisher, Treasurer; Dr. W. H. Robinson, Censor.

J. B. MAXWELL, Secretary.

WHITESIDE COUNTY.

The Whiteside County Medical Society met in Sterling Oct. 13, 1909. The first paper was read by Dr. Frank Anthony, of Sterling, on "Mistakes in Diagnosis in Accidents." This paper was very interesting and instructive and brought out a discussion enjoyed by all present. Dr. Frank Fitzgerald, of Morrison, read a paper an "Bright's Disease." Though handled from a broad standpoint and very exhaustive in its presentation it seemed simple and left little room for comment and debate. Following the reading of these papers the society adjourned and together enjoyed an hour of social concourse during dinner. On reassembling a paper was read by Dr. C. A. Griswold, of Fulton, the Nestor of the medical profession in Whiteside county. This paper, "Mind and Body in Disease," was thoroughly enjoyed by all as it is seldom that a medical subject is presented in such a pleasing manner from a purely literary standpoint. The paper was so connected and interwoven that to present extracts from it would not do it justice. In conclusion he said: "My excuse for this paper is that though old truths are well remembered, it is often wise to introduce them anew, and to emphasize the fact that the medical profession is two-fold, dealing with both mind and body in disease."

A report of the committee on itinerant vendors to guarantee funds from the county society treasury to obtain evidence regarding and for the prosecution of itinerant vendors was concurred in.

Dr. McBride of Coleta and Dr. Aborn of Sterling were admitted to membership in the county society. The following were present: Drs. Patch and McBride of Coleta; Griswold and Durkee of Fulton; Wahl of Tampico; Gordon, Smith, Anthony, J. F. Keefer, J. R. Keefer, Maxwell, Parker, Broderick, Aborn, of Sterling; Fitzgerald, Nowlen, Sullivan, of Morrison; Allen, of Rock Falls.

Next meeting will be held in Morrison, Dec. 8, 1909.

E. P. SULLIVAN, Secretary.

WOODFORD COUNTY.

The Woodford County Medical Society met in regular session in the city council chamber of the City Hall in Minonk, Oct. 19, 1909. Dr. W. F. Morrison presided. The minutes of the last meeting were read and approved. The visiting physicians were Dr. Geo. W. Parker, of Peoria; Dr. Zeller, of Bartonville; Dr. Love, of Dana; Dr. Wilcox and Dr. Evans, of Minonk. Among the physicians of the society present were Drs. Washburn and Millard, of Minonk; Nichols, of El Paso; Briggs, of Roanoke; Gordon, of El Paso; Morris and Wilcox, Jr., of Minonk, and Seidl, of Benson, Ill. Dr. Geo. W. Parker read a paper on "Mucous Colitis" which was greatly appreciated and full of interest. It brought about a general discussion from almost every member present. Dr. Zeller gave a most interesting talk on pellagra, exhibiting photos of cases present in Bartonville Asylum directly under his observation. He urged every physician present to be on the lookout for it and assist him in his investigations of this little understood malady. It was followed by a general discussion by all present. A vote of thanks was extended to Drs. Parker and Zeller for their valuable papers and the members from Minonk for their cordial entertainment and to the City Council of Minonk for the use of the City Hall. The meeting then adjourned.

F. C. NICHOLS, Secretary.

NEWS OF THE STATE

PERSONAL.

Dr. Elva A. Wright, Lake Forest, has returned after a summer abroad.

Dr. John Shaw, Joliet, has sold his home and will locate in Montana.

Dr. Arthur C. McIntyre and family, Troy Grove, have returned from Europe.

Dr. G. S. Edmonson, Clinton, has been appointed district surgeon of the Illinois Central.

Dr. Alsephus T. Robertson, Ashmore, who has been seriously ill, is reported to be improving.

Dr. and Mrs. Arnold C. Klebs, Chicago, have taken a villa at Ouchy, on Lake Geneva, Switzerland.

Dr. Frank G. Crowell, Rochelle, is ill at the home of his brother in Pawpaw, with acute kidney disease.

Dr. Albert Purcell, Streator, has been appointed division surgeon of the Chicago, Ottawa & Peoria Railroad.

Dr. H. W. Merrill, Maywood, is suffering from the effects of a paralytic stroke and is unable to read or speak.

Dr. Clarence W. Chapin, Weldon, has succeeded Dr. Guy G. Dowdall as president of the Dewitt County Medical Society.

Dr. John C. Augustine, Batavia, was operated on in Chicago for the removal of enlarged glands of the neck November 1.

Dr. Marcus Whiting, Peoria, has returned from a 10,000-mile trip with his wife and daughter through Alaska and Mexico.

Dr. Frank Buckmaster, Effingham, has been made instructor in experimental surgery in Barnes Medical College, St. Louis.

Dr. G. G. Zoehrlaut, Chicago, was elected supreme editor of Phi Beta Pi, the medical fraternity, at the convention in New Orleans.

Dr. Joseph Zeisler, Chicago, reports, after a tour of Europe, that even Europeans look to America as the home of valuable medical discoveries.

Dr. H. E. Wagner, 2424 Armitage Avenue, Chicago, has returned from Europe, where he attended special courses of study on diseases of the stomach and intestines.

Dr. J. W. Bozarth, Mt. Pulaski, departed Saturday, November 7, for Omaha, Neb., where he will take a three months' post-graduate course at the Creighton Medical College.

Dr. J. Tidball, Grafton, Jersey County, has retired from practice and removed to San Diego, Cal. The Doctor will keep up his membership in the Illinois State Medical Society.

Dr. Ralph Edward Sheldon, associate in anatomy in the University of Chicago, has been appointed assistant professor of anatomy in charge of histology, embryology and neurology in the University of Pittsburg Medical School.

Dr. E. H. Butterfield, former medical director of the Ottawa Tent Colony, announces his connection as medical director with the Buffalo Rock Sanitarium of Ottawa, Ill., an institution for the treatment of pulmonary tuberculosis.

Dr. J. Huber, Pana, for many years a practitioner in that city, is critically ill with a heart lesion and will probably be compelled to give up practice. Dr. Huber recently gave a perpetual lease of a floor in his new building to the Oddfellows of Pana.

Dr. Edward Bowe has succeeded Dr. Frank P. Norbury as superintendent of Maplewood Sanatorium, Jacksonville, and Dr. Elmer L. Crouch, late first assistant physician at the Jacksonville State Hospital, has been appointed resident physician and superintendent of the sanatorium.

Sir Wilfred T. Grenfell, M.D., of Labrador, delivered an address on the subject, "Is Life Worth While?" before the Sunday Evening Club November 1. As the Sir Knight was married November 18 to a charming young society woman of Chicago, Miss Anna MacClanahan, we can guess the answer to his question.

The terrible calamity at the Cherry mine brought out stories of personal bravery and heroic self-sacrifice worthy of the best days of chivalry. Dr. L. B. Howe, the St. Paul Mining Company physician, by his initiative and dauntless bravery, is credited with saving at least twenty-five lives and only escaped by a miracle when the other members of the rescuing party perished in flames.

NEWS ITEMS.

—The net receipts of Chicago Tag Day, October 16, were $40,167, which is to be divided among sixteen charities.

—Evanston Hospital has received an anonymous gift of $25,000. With this addition the endowment fund amounts to $86,000.

—The Jewish Consumptive Relief Society realized more than $4,000 from its annual ball held at the First Regiment Armory, Chicago, October 31.

—The physicians of St. Charles have requested the editors of newspapers to refrain from mentioning their names in connection with operations, accidents or other cases.

—E. P. Standard, M.D., who has been practicing in Macomb as assistant surgeon at St. Francis Hospital, has taken up his residence in Canton, where he will limit his practice to general surgery.

—Dr. W. A. Hinkle has filed a suit for damages against the Peoria Railroad Company on account of injuries claimed to have been received last summer, due to the negligence of a motorman.

—The Kewanee Physicians' Club, at the annual meeting, November 4, elected Dr. Peter J. McDermott, president; Dr. H. Nelson Heflin, vice-president, and Dr. Gideon H. Hoffman, secretary-treasurer.

—Mrs. E. Harrison, a fortune-teller on Milwaukee Avenue, Chicago, charged by the State Board of Health with practicing medicine without a license, is said to have been found guilty and fined $100 and costs.

—The physicians of Sterling and Rock Falls have decided to lease a building in Sterling for a hospital. Applications have already been received from public-spirited people for the privilege of furnishing rooms.

—The trustees of Lincoln State School and Colony have provided for the establishment of a department of clinical psychology in the State Institution for the Feeble-minded, to be under the care of Dr. Edmund B. Huey.

—*Entirely Out of Date.*—"Give me three grains of corn, mother; only three grains of corn," begged the child. "And get pallagra? Nix," replied the parent. Herewith the tot regretted the advance of science. —*New York Sun.*

—An immense boulder placed in Grant Park on the Chicago lake front by order of officers of the Chicago Medical Society, Christmas, 1905, as a memorial to Dr. Samuel Guthrie, has been ordered evicted by the Appellate Court.

—At the eighty-ninth semi-annual meeting of the Fox River Valley Medical Society, held in Aurora, November 9, Dr. Edward H. Abbott, Elgin, was elected president; Dr. C. H. Evans, Aurora, vice-president, and Dr. Wm. H. Schwingel, Aurora, secretary-treasurer.

—Dr. Frank Parsons Norbury, who has been appointed superintendent of the Kankakee State Hospital, was given a banquet at Jacksonville, October 15, by the Morgan County Medical Society and the Jacksonville Medical Club. The banquet was served at the Pacific Hotel, and Dr. Carl E. Black acted as toastmaster.

—Dr. Haldane Cleminson was convicted by a Chicago jury, November 20, of wife murder by chloroform poisoning and his penalty was fixed at life imprisonment. The fact that murder by chloroform is so rare, together with sensational details in the evidence, caused great interest in the trial among the profession.

—The Council of the Chicago Medical Society protested against the new ordinance prohibiting vehicles from standing unattended for more than an hour on the downtown streets. Physicians want to leave their automobiles on the street during their office hours. Under the ordinance a chauffeur can sit in a machine at the curb indefinitely.

—The Lake County Tuberculosis Institute has just received $2,150 from liberal contributors to be used in building a new bath-house. Work will begin at once. Several new cottages are under construction, also being gifts to the institute. Each new place made for patients is spoken for before construction is completed and there is rarely a vacancy.

—One of the Chicago papers had a wierd story to the effect that a blind student at a medical school there was acquiring an education by telepathy, that is, by reading the minds of other students as they read to themselves. Inquiry at the college, however, disclosed that the student has the work read to him and is able to follow the course in that way.

—Dr. Harriet A. Hook, former head physician at the Lincoln Asylum for Feeble-minded Children, was exonerated by the Appellate Court in Chicago last month for entering the home of Ben M. Giroux to investigate the condition of Frank M. Giroux, who had been burned by falling on a radiator in the asylum. It will be remembered that the Giroux case caused great excitement in the last political campaign and featured in the legislative investigation of the state institutions.

—At the annual meeting of the Southern Illinois Medical Society in East St. Louis, November 5, the following officers were elected: President, Dr. Oscar B. Ormsby, Murphysboro; vice-presidents, Drs. Edward W. Fiegenbaum, Edwardsville, and Andrew Hall, Mount Vernon; secretary, Dr. Charles W. Lillie, East St. Louis; assistant secretary, Dr. Alonzo B. Capel, Shawneetown; treasurer, Dr. H. E. Telford, Centralia.

—Edward R. Hibbard, Oak Park, formerly president of various medical institutes, who had previously been convicted of having used the mails to defraud and sentenced to two years in the house of correction and in whose case the United States Circuit Court of Appeals refused an order for a new trial, was taken before Judge Landis, October 26, and told that if he would plead guilty a fine would be imposed. He plead guilty, was fined $1,500, and paid the fine.

—Dr. Charles F. Burkhardt, Effingham, was recently sued for $5,000 for malpractice. According to the daily press, the case was one of the hardest fought before this term of court. It appears that W. L. Goodell was arrayed on the part of the plaintiff, while Dr. Burkhardt had fifteen professional brethren who testified that the best of treatment had been rendered. The cause of the deformity in the elbow is said to have been an injury to the musculo-spiral nerve. The jury on October 28 returned a verdict exonerating the defendant.

—In the trial of Mrs. Augusta E. Stetson, deposed leader of a Christian Scientist church in New York, by the officials in Boston, the evidence savors strongly of the rites of voodooism. It is stated that she gave one Archibald McClellan his deserts with the following incantation: "Archibald McClellan! Go to your place! If your place be in God, go there; if it be not in God, go to the other place. If that place be six feet under ground, go there! The law of truth to error is, thou shalt surely die and what thou doest do quickly." That would be a right smaht conjuh' in some sections of the country.

—The Physicians' Club of Chicago held the first meeting of the year November 19 at the Great Northern Hotel. The after-dinner program consisted of addresses on the general topic, "Medical Contract Practice as Viewed by Corporations." The following speakers participated: Dr. A. J. Bouffleur, chief surgeon to the C., M. & St. P. R. R. Co., "From the Standpoint of Surgeon to the Railroads"; Dr. James H. Burry, chief surgeon to the Illinois Steel Company, "From the Standpoint of Surgeon to the Steel Works"; Mr. George E. McCaughan, attorney for the Rock Island Railroad, "From the Standpoint of Attorney to the Railroad"; Dr. C. P. Caldwell, member of the Committee on Contract Practice of

the Chicago Medical Society, "The Two Sides of the Question." Discussion opened by Drs. John E. Owens, Harold N. Moyer and I. C. Gary. The corporation side of contract practice was ably presented at this meeting, and THE JOURNAL will present the argument in some detail in a later issue.

PUBLIC HEALTH.

—Out of the proceeds of the annual volkfest of the Schwaben-Verein $1,150 has been donated to the various hospitals of the city.

—The McAlister Hospital at Waukegan has been so overcrowded that the board has decided to build an addition in the spring.

—The typhoid death rate in Chicago this year promises to be the lowest in the history of the city, and it will rank with the best American cities.

—The need of a hospital at St. Charles was demonstrated last month by the large number of patients from St. Charles in hospitals at Elgin, Geneva and Aurora.

—To prevent scarlet fever extending from Rockdale to Joliet, Health Commissioner H. G. Schuessler, of Joliet, had all interurban cars fumigated after every trip during a recent epidemic.

—In the contest over the smoke nuisance in Chicago, an ally to the smokers has appeared in the person of Col. W. P. Rend, who claims that the opponents of smoke are playing into the hands of the Commonwealth Edison Company, who publicly announce they are ready and willing to supply electric power to at least two railroads.

—The Illinois Branch of the American National Red Cross closed their fiscal year October 31. The report of the treasurer shows that $95,192.72 had been received from the public and used in the charitable work of the organization, and that the total administrative expenses were $126.78.

—The State Board of Health announces that it will furnish diphtheria antitoxin of the highest quality without charge in cases of necessity, the only requirement being that the physician who obtains the antitoxin will give a receipt for it and will furnish the State Board of Health with a clinical report of the patient to whom the antitoxin was administered. The state distribution was made possible by the appropriation passed by the last general assembly.

—The following physicians were named by the mayor of Chicago to attend the Conference on the Prevention of Infant Mortality, to be held at Yale University, November 11 and 12, under the auspices of the American Academy of Medicine: Drs. Wm. A. Evans, Isaac A. Abt, Thomas A. Woodruff, Casey A. Wood, Frank X. Walls, Frank S. Churchill, Caroline Hedger, Joseph Damiani, George C. Hunt, Joseph P. Cobb, Stephen R. Pietrowicz, and Prof. Charles R. Henderson.

—Under an arrangement between the Memorial Institute and the Chicago retail druggists, with some assistance from the department of health, effective since November 15, the retail price of diphtheria anti-

toxin has been reduced an average of 75 per cent. from former prices, and it will be on sale by all druggists. An amount containing 1,000 units now retails for 60 cents; 3,000 units, $1.10; 5,000 units, $1.50. The former prices were $2, $5 and $7.50, respectively. The department asks all persons able to pay these very reasonable prices to leave the free state supply for the destitute who will need all of it.

—Twenty-eight state legislatures out of 43 in session during the past year passed 64 laws relating to the prevention or treatment of human tuberculosis and appropriated $4,000,000 to advance the crusade. New state sanatoria will be built in Pennsylvania, Arkansas, Oregon, South Dakota, North Dakota and Florida. Connecticut will have three. Six other states will enlarge their sanatoria. There are now 27 states where such institutions have been established. Every state east of the Mississippi, except Illinois, West Virginia, Kentucky, Tennessee, South Carolina and Mississippi, have provided hospitals for tuberculous patients. Twelve states now have laws providing for the strict reporting and registration of tuberculosis cases.

—The Illinois Occupational Disease Commission appointed expert investigators and compilers, but found that the appropriation of $15,000 could not be used for salaries. "We could save hundreds of lives right here in the State of Illinois simply by the information we could get together and make public in the next two years if we could use to the best advantage this money which has already been appropriated," said Professor C. R. Henderson, secretary of the commission. "It is tantalizing. Out of funds provided by the University of Chicago I have had a thoroughly trained expert assistant at work for a long time, and there is a great mass of data already gathered. The state can have the advantage of all this earlier work, but it is in such shape now that it is of no use. It needs to be arranged and classified. I cannot do it with my fingers, and a stenographer is useless. We must have expert assistance in this work if it is to proceed."

—A study of the results obtained by the Chicago Tuberculosis School, maintained jointly by the Tuberculosis Institute and the Board of Education in August with a class of thirty children from the stockyards district, has induced the trustees of the Elizabeth McCormick memorial fund to make a grant of $2,500 to the United Charities for an open-air school to be run throughout the year. Experience has shown that the regular public school course contributes to the physical deterioration of these children owing to poor ventilation, rigid posture at desks, lack of rest, proper exercise and other factors. The school will be conducted on the roof of the Mary Crane nursery in a tent constructed of asbestos board. The hours of rest will be spent by the children in the open air on the roof, bundled up in blankets and Eskimo suits. The Board of Education will provide a teacher and desks. The medical staff represents the health department, through Dr. Evans, and the Tuberculosis Institute. The thirty children attending the trial school in August gained an average of 3.8 pounds during the mouth. One month after their return to their

homes, ten had lost in weight, three had remained stationary, and seventeen had continued to gain. Seventeen were first-stage cases of pulmonary tuberculosis, two had tubercular glands, and eleven were pronounced pretubercular. Sixteen had been and ten were still directly exposed to tuberculosis in their homes.

CHANGE OF LOCATION.

Dr. H. H. Rogers has moved from Cuba to Canton.

Dr. B. H. Webb has moved from Ewing to West Frankfort.

Dr. F. O. Pershing has removed from Dallas City to Crescent City.

Dr. A. C. Sheppard has removed from Glen Carbon, Ill., to Bostwick, Neb.

Dr. George R. Proctor has removed from Coleta to Grand View, Idaho.

Dr. E. W. Mueller has removed from 3359 to 3401 Southport Avenue, Chicago.

Dr. Wilbur M. French has removed to 3401 West Harrison Street, Chicago.

Dr. F. H. Powers has removed from 4012 Sheridan Road, Chicago, to Vineland, N. J.

Dr. Charles B. Fry, of Mattoon, expects soon to retire from the practice of medicine.

Dr. C. E. Harris has removed from 628 to 331 East Forty-seventh Street, Chicago.

Dr. W. B. Williams has moved from Cissna Park to 949 Greenwood Terrace, Chicago.

Dr. W. J. Webb has removed from 1609 Roscoe Street to 4053 North Avers Avenue, Chicago.

Dr. M. W. Thompson has removed from 1201 Grand Avenue to 1432 North Robey Street, Chicago.

Dr. John Binkley has removed from "Rest Haven," Waukesha, Wis., to 4328 Lake Avenue, Chicago.

Dr. Glen Wood has removed from 134 Monroe Street, Chicago, to 1560 Race Street, Denver, Colo.

Dr. T. Anthony Kreuser has removed from 1934 Lincoln Avenue to 2152 Montrose Avenue, Chicago.

Dr. L. J. Hughes has removed from 133 State Street, Chicago, to 806 Columbus Avenue, Fort Wayne, Ind.

Dr. Esther A. Ryerson, formerly of Belle Hospital, has removed to 726 West Church Street, Champaign.

Dr. Ella V. Timmerman has removed from 78 State Street, Chicago, to Manhein Cottage, Little Falls, N. Y.

Dr. Rosalie M. Ladova has removed from 4304 Grand Boulevard, Chicago, to 46 Reed Street, Ashville, N. C.

Dr. P. J. Gillen, of East St. Louis, has purchased the property and practice of Dr. G. G. Dowdall in Clinton, Ill.

Dr. William Wenzlick has removed from 1206 Lawrence Avenue, Chicago, to 1101 Orange Street, Redlands, Cal.

Dr. Hugh K. Schussler has removed from 4119 Kenmore Avenue, Chicago, to 415 West Fifty-seventh Street, New York City.

Dr. G. G. Dowdall, of Clinton, has removed to 6200 Monroe Avenue, Chicago, where he has taken an assistantship under Dr. J. B. Murphy.

Dr. John Z. Powell, of Logansport, Ind., has removed to Springfield and entered into business with his son as a partner in the Springfield Dairy Company.

MARRIAGES.

Robert E. Stevens, M.D., to Miss Mabel Healey, both of Rochelle, October 20.

Emil H. Hermann, M.D., Highland, to Miss Bertha Hermann, of Fillmore, October 31.

Walter Wilson House, M.D., Thompsonville, to Miss Nona Steele, of DeSoto, October 24.

Harry DeWitt Fast, M.D., to Miss Luella Adaline Miller, both of Mackinaw, October 27.

Ralph Vernon Moore, M.D., Amboy, and Miss Catherine Sheridan, of Freeport, November 3.

D. W. Milligan, M.D., of Springfield, and Miss Kathryn Becker, of Springfield, Nov. 17, 1909.

Lloyd E. Goodpasture, M.D., Thayer, to Miss Frances Ann Carter, of Chesterfield, October 14.

Aaron P. Wolover, M.D., Willisville, to Miss Portia Catlett, at Springfield, September 21.

Robert Irving Bullard, M.D., and Miss Ellen Merriman, both of Springfield, November 4, at Springfield.

Ernest Grogg Motley, M.D., Virden, and Miss Sromon Augusta Bartlett, of Carlinville, Wednesday evening, October 27, at Carlinville.

George J. Goodin, M.D., of New Hartford, to Miss Nancy Leona Haskins, of Pittsfield, Nov. 17, 1909. Dr. Goodin has located in Belleview, Ill.

DEATHS.

Charles C. Thompson, M.D., of Taylorville, died in October, 1909.

L. Joseph Struzynski, M.D. University of Dorpat, Russia, 1850; died at his home in Joliet, November 5, from senile debility, aged 86.

Robert Gibson, M.D., Missouri Medical College, St. Louis, 1875; for forty years a practitioner and medical missionary of Alton; died at his home in Siloam Springs, Ark., October 21, from cerebral hemorrhage, aged 71.

DARIUS F. BOUGHTON, M.D. University of Michigan, 1870; of Chicago, from 1872 to 1881; a member of the staff of the State Hospital for the Insane, Mendota, Wis.; died in Wilmette, July 30, from carcinoma of the rectum, aged 65.

FRANKLIN B. IVES, M.D. Rush Medical College, Chicago, 1850; a practitioner and clergyman of Bureau County for many years, and later a resident of California; died at his home in Long Beach, Cal., November 1, from senile debility, aged 86.

GEORGE C. WAISS, M.D. Rush Medical College, Chicago, 1894; a member of the American Medical Association; consulting gynecologist to the Hospital of St. Anthony of Padua; died at his home in Chicago, November 11, from appendicitis, aged 42.

THOMAS J. BOYKIN, M.D. University of Pennsylvania, Philadelphia, 1852; a surgeon in the confederate service during the Civil War; for many years a resident and wholesale druggist of Baltimore; died at the home of his daughter in Chicago, October 22, from senile debility, aged 82.

JOHN ALBERT JONES, of Springfield, aged 62 years; graduate of the University Hospital Medical College of New Orleans, where his uncle, Dr. Joe Jones, was a well-known practitioner for many years. Dr. Jones practiced in Springfield and other points, but had retired for a number of years prior to his death.

WILLIAM E. SCOBEY, M.D. Medical College of Ohio, Cincinnati, 1886; contract surgeon in the army and afterward captain and assistant surgeon and assigned to duty with the Forty-fifth Kentucky Volunteer Infantry during the Civil War; died at his home in Kankakee, October 24, from nervous breakdown, aged 68.

H. G. WHEELER, M.D., of Breckenridge, Nov. 21, 1909, of a complication of diseases, aged 67 years. Deceased was born April 14, 1842, in Gibson County, Indiana. He served with distinction in the Civil War as first lieutenant of Company I, Forty-eighth Illinois Volunteer Infantry. He was a practicing physician of Springfield for a number of years and was a Mason.

J. J. CONNER, M.D., died November 10 at his home in Pana, aged 60 years, after an illness of three weeks with heart trouble. Dr. Conner was prominent in political circles, being a politician of the Republican ranks and widely known over the state. He was affiliated with the Illinois State Medical Society and held an office in that society at one time. He had been a resident of Pana for the past twenty years. He was also a Mason and a Woodman, which organizations conducted the funeral.

FRANK CHARLES BOURSCHEIDT, M.D. Rush Medical College, Chicago, 1887; one of the founders of the Illinois State Pharmaceutical Association in 1881, and its first president; from 1881 to 1890 a member of the Committee on Revision of the United States Pharmacopeia; for one year president and for two years secretary of the Peoria Medical Society; gynecologist to St. Francis Hospital; and at one time commissioner of health of the city; died at his home, October 16, from carcinoma of the stomach, aged 58.

HENRY A. EIDSON, M.D. Rush Medical College, 1880; died at his home in Willow Hill, from pulmonary hemorrhage, Oct. 7, 1909, aged 62 years. Dr. Eidson has held the following positions in Masonry: Past Master, Cooper Lodge, No. 489, A. F. and A. M.; Grand Lecturer and District Deputy Grand Master of the Fortieth District; Past Grand Master of Willow Hill Lodge, No. 884, I. O. O. F.; member of Olney Commandery, Knights Templars; late president of Jasper County Medical Society. He was born in Mexico, Ind., in 1846.

MARCUS PATTEN HATFIELD, M.D. Chicago Medical College, 1872; for many years a member of the American Medical Association; professor of diseases of children in Chicago Medical College from 1875 to 1896; since 1898 professor of pediatrics in the Chicago Clinical School; clinical professor of pediatrics in the medical department of the University of Illinois; president of the medical board of La Rabida, the Jackson Park Fresh Air Sanitarium; author of several works on the diseases of children and hygiene and editor of the Chicago *Clinic;* died at his home, November 11, from tuberculosis, aged 60.

Book Notice.

SURGICAL DIAGNOSIS. Second revised edition. By Daniel N. Eisendrath, M.D., Professor of Surgery in the Medical Department of the University of Illinois (College of Physicians and Surgeons). Octavo of 885 pages, with 574 original illustrations, 25 in colors. W. B. Saunders Company, Philadelphia and London, 1909. Cloth, $6.50 net; half morocco, $8.00 net.

The fact that a second edition has been called for within two years is an assurance to the author that a book upon surgical diagnosis has a field of usefulness which has not been exhausted. The text of the previous edition has been thoroughly reviewed and much new subject-matter added. Every effort has been made to include the newer methods of diagnosis and to amplify those which were taken up previously, especially the chapters on cystoscopy and ureteral catheterization. Many sections have been entirely rewritten. More recent investigations have shown that former views in regard to localization of the motor centers in the cortex of the brain were erroneous, and this portion of the chapter on the head was changed to conform with these later views.

The section upon diagnosis of renal lesions has been entirely rewritten in order to keep pace with the rapid advances in this field. Many original illustrations have been added in order to show the importance of training the eye as well as the sense of touch. The kind reception which the book has received at the hands of the press and profession might well encourage the author in hoping that the present edition will be equally well thought of.

NOTICE.

My name having been used without my authorization in a pamphlet advertising an unethical preparation, I take this means of informing the medical profession that no more such pamphlets with my name will be issued. (Signed) J. H. CAMPBELL, M.D., Danville, Ill.

Nov. 17, 1909.

DEC 13 1909

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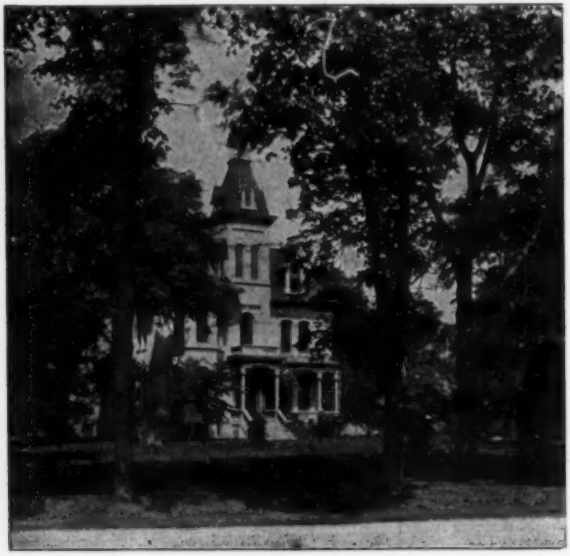

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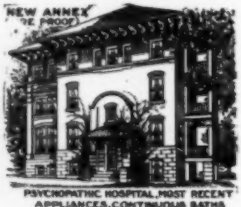

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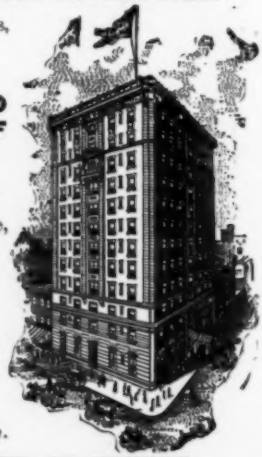

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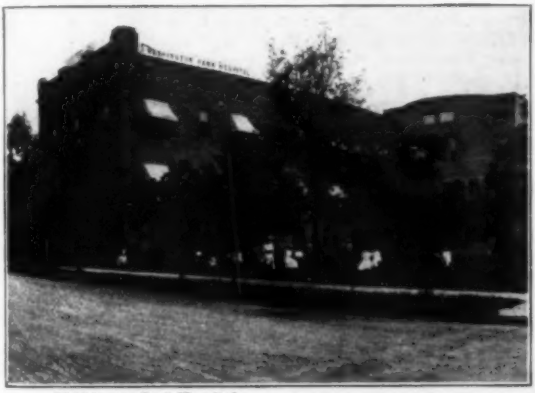

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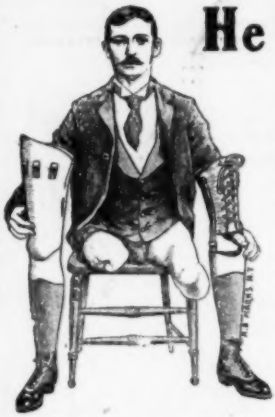

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